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# Water and Power

## 56TH ANNUAL REPORT

*fiscal year ending June 30, 1957*



BOARD OF WATER AND POWER COMMISSIONERS / CITY OF LOS ANGELES









## WATER AND POWER / 56TH ANNUAL REPORT

*Fiscal year ending June 30, 1957*

*Board of Water and Power Commissioners*

*City of Los Angeles*

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#### ON THE COVER

New \$81,000,000 Valley Steam Plant, as seen at night. The plant has a total generating capacity of 520,000 kilowatts, enough electricity to serve 1,000,000 people at the present rate of use.





NORRIS POULSON  
Mayor of Los Angeles

## LOS ANGELES CITY COUNCIL

JOHN S. GIBSON, JR.  
Fifteenth District  
President, City Council

EVERETT G. BURKHALTER  
First District

\*EARLE D. BAKER  
Second District

\*\*PATRICK D. MCGEE  
Third District

HAROLD A. HENRY  
Fourth District

ROSALIND WIENER WYMAN  
Fifth District

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JAMES C. CORMAN  
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Eleventh District

\*RANSOM M. CALLICOTT  
Twelfth District

ERNEST E. DEBS  
Thirteenth District

JOHN C. HOLLAND  
Fourteenth District

\*\*Chairman—  
\*Member City Council's  
Water and Power  
Committee

WILLIAM S. PETERSON  
GENERAL MANAGER  
AND CHIEF ENGINEER  
BURTON S. GRANT  
ASSISTANT GENERAL MANAGER  
AND CHIEF ENGINEER  
FRANK TWOHY  
CONTROLLER

## DEPARTMENT OF WATER AND POWER THE CITY OF LOS ANGELES

207 SOUTH BROADWAY  
P. O. BOX 3669 TERMINAL ANNEX  
LOS ANGELES 54, CALIFORNIA  
TELEPHONE: MICHIGAN 4211

COMMISSIONER  
J. C. MOLLER, JR., PRESIDENT  
ROBERT A. HEFFNER  
W. BALLENTINE HENLEY  
WILLIAM B. HIMROD  
W. A. SIMPSON, JR.  
JOSEPH L. WILLIAMS, SECRETARY

Honorable Norris Poulson, Mayor  
Honorable Members, City Council  
City of Los Angeles, California

Gentlemen:

In accordance with provisions of Article IV, Section 64 of the Los Angeles City Charter, we are pleased to transmit to you herewith the 56th Annual Report of the Board of Water and Power Commissioners for the fiscal year ending June 30, 1957.

This report, recording the accomplishment of the Department of Water and Power in meeting the increasing requirements for water and electricity by the rapidly growing City of Los Angeles, is one in which we believe all the citizen-owner-customers of this largest municipally owned utility in the nation may take justifiable pride.

The service of water and electricity has been provided promptly and at very low cost to users despite the large demands and the unprecedented growth of our city. The Department of Water and Power has met all financial obligations and has continued to be a self-sustaining city-owned utility business, with no financial burden imposed upon the taxpayers.

Sincere appreciation is expressed by this Board to the Mayor and City Council, to the other elective officials of the city, and to the boards and commissions and managers of other city departments for the excellent cooperation which has been extended throughout the year. We also desire to acknowledge with gratitude the very effective services rendered by the management and the personnel of the Department of Water and Power which made possible the substantial progress of the 1956-57 fiscal year.

Respectfully submitted,

J. C. Moller, Jr., President  
Board of Water and Power Commissioners

## BOARD OF WATER AND POWER COMMISSIONERS



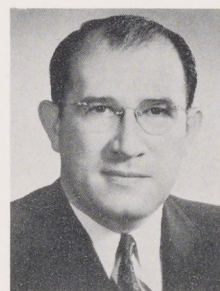
J. C. MOLLER, JR.  
President



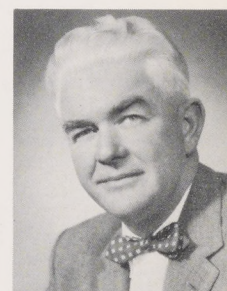
WILLIAM B. HIMROD  
Vice President



ROBERT A. HEFFNER



W. BALLENTINE HENLEY

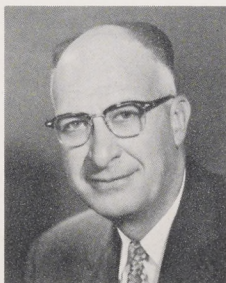


WILLIAM A. SIMPSON, JR.

## DEPARTMENT OF WATER AND POWER



WILLIAM S. PETERSON  
General Manager  
and Chief Engineer



BURTON S. GRANT  
Assistant General Manager  
and Chief Engineer

SAMUEL B. NELSON  
Chief Engineer of Water Works,  
and Assistant Manager

IVAN L. BATEMAN  
Chief Electrical Engineer  
and Assistant Manager

FRANK TWOHY  
Controller

GEORGE C. SOPP  
Joint System Head  
and Assistant Manager

GILMORE TILLMAN  
Chief Assistant City Attorney  
for Water and Power

JOSEPH L. WILLIAMS  
Secretary, Board of  
Water and Power Commissioners





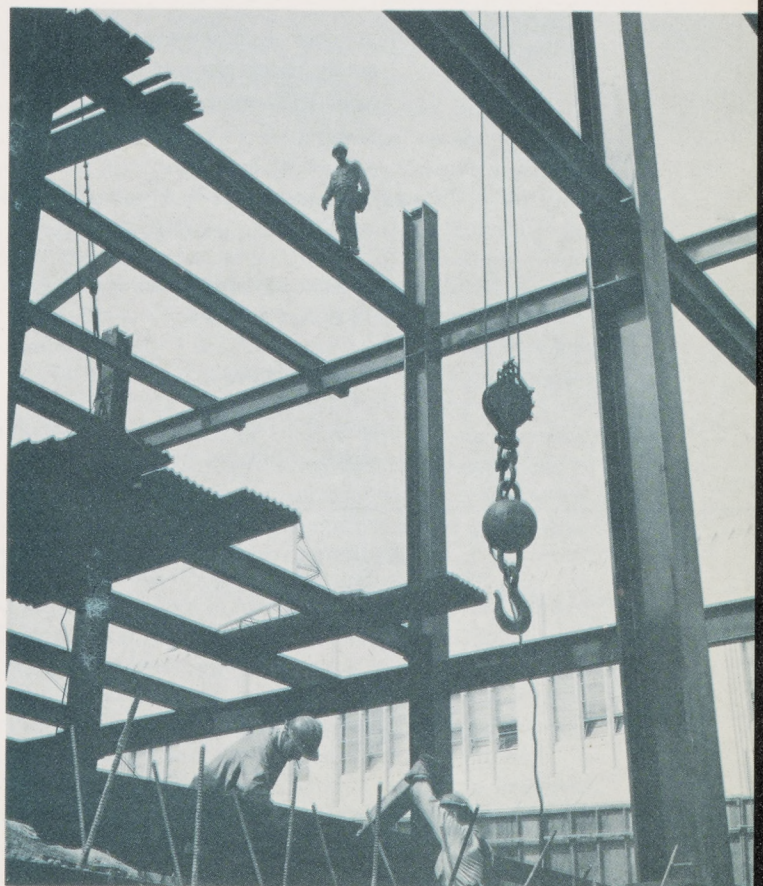
## LOS ANGELES...MIRACLE OF PROGRESS

Los Angeles' rapid growth represents a miracle of progress by which the city has advanced in a relatively few years to become a great metropolitan center, third in the nation in population and industry. The accelerating gain in population of the present decade is representative of this remarkable development. The U.S. Census for 1950 placed Los Angeles' population at 1,970,358; the U.S. Special Census of September 26, 1953, at 2,104,663; the U.S. Special Census of February 25, 1956, at 2,243,901; the estimated population as of June 30, 1957, at 2,347,700. Thus the gain between 1950 and 1953 was at the rate of 38,400 per year; between 1953 and 1956, at the rate of 57,600 per year; between 1956 and the middle of 1957, at the rate of 78,000 per year.

Other growth factors also reflect Los Angeles' continuing expansion in the period from June 30, 1956, to June 30, 1957. The number of dwelling units increased from 809,030 to 834,271; new building construction, from \$459,906,345 to \$525,344,000; net assessed valuation of secured property, from \$3,201,000,000 to \$3,498,000,000; total bank deposits, from \$3,707,000,000 to \$3,886,000,000; bank demand debits, from \$63,976,727,000 to \$68,149,834,000.

Industrial expansion continued during the year as 55 new industries were established and 145 existing industries expanded their plants in the City of Los Angeles, with a total investment in new and expanded factories of \$70,340,500.

To keep pace with the rapid expansion and growth of Los Angeles and assure ample water and power for future needs, the Los Angeles Department of Water and Power invested a total of \$56,751,296 in additions, extensions and improvements to the water and electric systems during the year.



AIR PHOTO BY PACIFIC AIR INDUSTRIES



## HIGHLIGHTS OF THE YEAR

### SERVICE

|  |                            |
|--|----------------------------|
| Water Sales . . . . .                            | 139 billion gallons        |
| Water Customers (Average for the year) . . . . . | 536,788                    |
| Power Sales . . . . .                            | 5.8 billion kilowatt hours |
| Power Customers (Average for the year) . . . . . | 857,981                    |

### FINANCIAL

#### *What We Received*

Total income from sales of water and electricity, and other sources incidental to operating the business

| <i>Water</i>  | <i>Power</i>  | <i>Total</i>  |
|---------------|---------------|---------------|
| \$ 30,835,334 | \$ 88,137,751 | \$118,973,085 |

For operation of water and electric systems . . .

\$ 16,583,186      \$ 60,380,093      \$ 76,963,279

For paying interest and expenses on bonds and other debt . . . . .

2,560,680      5,960,197      8,520,877

To provide for depreciation . . . . .

6,082,939      13,179,991      19,262,930

#### *How It Was Used*

[Net income (amount left after subtracting above 3 items from total income) . . . . .

\$ 5,608,529      \$ 8,617,470      \$ 14,225,999]

For transfer from net income to general and reserve funds of the City of Los Angeles . . . . .

1,445,326      3,607,000      5,052,326

Remainder of net income available for retirement of bonds and to pay part of cost of additions, extensions and improvements . . . . .

\$ 4,163,203      \$ 5,010,470      \$ 9,173,673

Total assets, including what we own and what is owed us, less accumulated depreciation . . . . .

\$262,199,455      \$544,697,011      \$806,896,466

Less what we owe others in the form of bonds or other funded debt . . . . .

93,211,000      265,302,970      358,513,970

#### *How We Stand*

Less miscellaneous liabilities . . . . .

6,157,827      17,050,040      23,207,867

Leaves the people of Los Angeles an equity reinvested in the business of . . . . .

\$162,830,628      \$262,344,001      \$425,174,629

### CONSTRUCTION

Additions, extensions, and improvements, fiscal year, 1956-1957 . . . . .

\$ 17,483,126      \$ 39,268,170      \$ 56,751,296

Additions, extensions, and improvements, ten-year period, 1947-1957 . . . . .

\$154,000,000      \$403,000,000      \$557,000,000



# A REPORT

*By the General Manager*

**To the Honorable  
Board of Water and Power Commissioners:**

Los Angeles' rapid growth in population, business, and industry continued during the 1956-57 year, presenting the Department of Water and Power with the dual challenge of meeting the increasing requirements of a large existing community and of an annual population addition greater than in any other U.S. city. Los Angeles grew at an estimated rate of 6,500 persons per month, or 78,000 per year.

At this rate, in ten years Los Angeles will add 780,000 persons—more than the 1950 census of San Francisco. Construction of more than 25,000 new dwelling units, and the investment of over \$70 million in new and expanded industries marked Los Angeles' vigorous expansion during 1956-57.

Increased water and electric needs were fully met, and the Department continued to build ahead for the future.

**GROWTH IN SERVICES AND FACILITIES**—During the year, the number of water customers rose from 528,823 to 542,600; power customers, from 836,913 to 868,938. Water consumption increased 6.3%, and electric energy sales, excluding sales to other utilities, 7.3%. Ample water was provided through the Los Angeles River basin and other local underground sources, the Los Angeles Owens River Aqueduct, and the Colorado River Aqueduct. Ample power was made available from city-owned steam generating plants, the hydroelectric sources of Hoover Dam, and city-owned hydro plants.

Construction was carried forward by the Water System on the Granada Trunk Line and other large facilities; the Power System completed the Valley Steam Plant, started work on the new Scattergood Steam Plant, and made other major installations. Construction for the year totaled over \$17 million for Water, over \$39 million for Power.

**FINANCIAL PROGRESS**—Total income of the Water System for the fiscal year increased to \$30,835,334, and Power System revenues to \$88,137,751. Net income, after operating expenses, interest and depreciation, was \$5,608,529 for the Water System, and \$8,617,470 for the Power System. The Department transferred to the city's general and reserve funds a total of \$5,052,326 from net income of the two systems, \$1,445,326 from water and \$3,607,000 from power. Remainder of net income of both systems was used for the retirement of bonds and to pay part of the cost of building new water and electric facilities. Current revenues met all operating costs while the large construction program was financed in part out of current revenues and the remainder by the sale of revenue bonds to be paid out of future revenues.

**RATES AND BONDING CAPACITY**—To meet higher operating costs, new electric rates were established effective December 1, 1956. This first electric rate increase in 36 years averaged 5.9% for all classes of service, and was expected to produce increased revenues of \$4,800,000 during the first year of operation. Sharp increases in fuel costs for the operation of the Department's steam power plants, due principally to unexpected rises in the price of fuel oil, made necessary a further



WILLIAM S. PETERSON  
*General Manager and  
Chief Engineer*

electric rate adjustment through a provision to compensate automatically for the rise or fall in fuel costs. Approval of a fuel cost adjustment was pending at the end of the fiscal year. No increase was needed in water rates, established in 1954.

During the year, a Charter amendment was approved increasing the bonding capacity of both the Water System and the Power System by 25%, thus assuring the continued long-range construction of necessary new facilities.

Water rates in Los Angeles continued to be lower than those of other large cities which import their water from distant points, and electric rates continued to be the lowest among the 16 largest cities of the United States.

**WATER AND POWER FOR THE FUTURE**—Los Angeles' water needs continued to be met, principally by use of the local underground sources and the city-owned Los Angeles Owens River Aqueduct supply, together with increasing employment of the city's share of water from the Colorado River Aqueduct. Los Angeles is still using a relatively small proportion of its entitlement of Colorado River water. There is a substantial reserve through this supply to take care of growth for an estimated twelve to fifteen years ahead. To obtain a further large supply for the period beyond, Los Angeles is giving vigorous support along with other water agencies and communities of California to the State-planned Feather River Project. From this \$1½ billion project, 1,773,000 acre feet annually are reserved for Southern California including Los Angeles.

For expansion of in-town water storage and distribution facilities, about \$85 million will be invested in water works construction during the next five years.

Under a five-year \$275,000,000 expansion program for power facilities, construction is under way on the first two units of 156,250 kilowatts each at the Department's new Scattergood Steam Power Plant, which is expected to have an ultimate capacity of some 1,200,000 kilowatts. Design is progressing for the somewhat larger Haynes Steam Power Plant.

Looking toward further development of hydroelectric power from the Colorado River, the Department of Water and Power at the end of the fiscal year was preparing an application to the Federal Power Commission for a preliminary permit for a power dam project at Bridge Canyon.

Anticipating future use of atomic power when nuclear reactors become economically practical, the Department is maintaining close contact with atomic power development and training technical personnel in nuclear power generation.

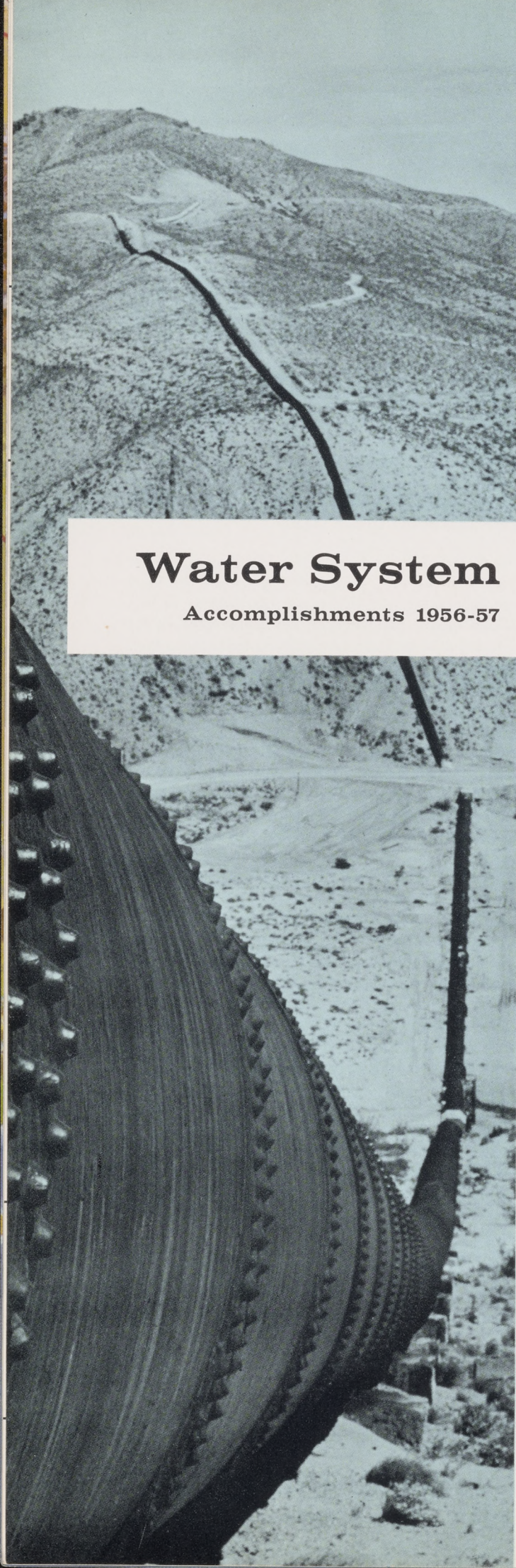
**ACKNOWLEDGMENT**—Appreciation and gratitude are expressed to the members of the Board of Water and Power Commissioners for their leadership and understanding, and to Los Angeles citizens and their elective officers and other officials of the general city government for their continued support and cooperation. Sincere thanks are extended to the executive staff and 11,000 employees of the Department of Water and Power for their conscientious and loyal devotion to duty and excellent standards of performance.

Respectfully submitted,

*William S. Peterson*

General Manager and Chief Engineer





# Water System

Accomplishments 1956-57



SAMUEL B. NELSON  
*Chief Engineer of Water Works  
and Assistant Manager*

Problems of ample water supply in recent years have caused concern in many parts of the nation, due to growing urban requirements, recurring drouth, and other conditions. Los Angeles, however, began to face such problems early in the century. The solutions achieved—importation of water by giant aqueduct systems—made possible the city's remarkable growth into a great metropolis, and established a pattern for long-range planning and building of water works in advance of need.

Located in a semi-arid land, Los Angeles not only had to overcome problems of water supply but also to provide for unusually large water storage, at distant points and within the city itself. This was necessary so that ample water would always be available if aqueduct flow should be interrupted by emergencies, or unusual local peak demands should occur. In addition, water distribution had to be provided for a city of 454 square miles, at elevations from sea level to 2,300 feet.

With this experience, the Water System has continued to meet all of Los Angeles' requirements, and has constantly prepared for its water needs well in advance.

In the 1956-57 year, an unusually high demand for water continued during the almost rainless fall and early winter of 1956, and new peaks in consumption were reached in the hot early summer of 1957. These tests were met and ample water was provided to meet all of Los Angeles' needs on time.

## GROWTH IN WATER CONSUMPTION

The over-all increase in water use in 1956-57 established a new one year consumption record of 153,205,000,000 gallons, an increase of 9,138,000,000 gallons, or 6.3% over the previous year. The city's average daily consumption of water for all purposes was 417,000,000 gallons, an increase of 22,000,000 gallons over the preceding year. Of this amount, 391,000,000 gallons daily were required for domestic, industrial and commercial purposes, as compared with 367,000,000 gallons daily last year. Per capita use for these purposes set a new record of 171 gallons per day, as compared with 165 gallons per day the previous year. As large agricultural tracts were taken over for urban development, use of water for irrigation declined from 28,000,000 gallons daily last year to 26,000,000 gallons daily in 1956-57.

A new one-day peak consumption record of 762,000,000 gallons was set on June 18, 1957, surpassing the previous peak of 756,000,000 gallons reached on September 1, 1955. High temperatures combined with extremely limited rainfall in November of 1956 resulted in unusually large consumption during that month averaging 423,000,000 gallons daily. The month of June, 1957, also proved to be a period of unusually

Jawbone Siphon on the Los Angeles Owens River Aqueduct.  
The aqueduct system brings water to the city from distances  
as far as 338 miles north in the Eastern High Sierra.



high demand for water, and a new record for that month was established with a consumption of 549,000,000 gallons daily.

#### WATER SUPPLY SOURCES

Through water supplied from three major sources, ample water was made available to Los Angeles during the year, with a substantial reserve capacity over and above current needs.

*Local Sources*—The Los Angeles River Basin, with its major flow and water storage below ground in the San Fernando Valley, together with other local underground supplies, provided the city with an average of 105.8 million gallons daily, or about 25% of Los Angeles' requirements, during the 1956-57 year. Replenishment of the underground basin was reduced by a subnormal rainfall during the year of 9.54 inches, or 34.4% below the long-term average, U.S. Weather Bureau reports indicated.

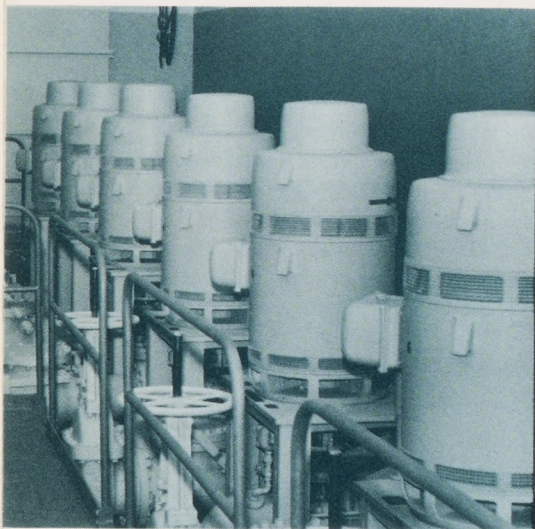
*Los Angeles Aqueduct Supply*—The city-owned Los Angeles Aqueduct System, which provides the bulk of Los Angeles'

Angeles Aqueduct, the city drew upon its share from the Colorado River Aqueduct of the Metropolitan Water District. From this source, Los Angeles obtained an average of 29.7 million gallons daily, which met about 7% of the city's requirements. Since Los Angeles' present entitlement of Colorado River Aqueduct water is about 390 million gallons daily, the city has large reserve capacity for growing water needs, provided California's rights in the Colorado River are maintained.

#### INCREASED SERVICES AND FACILITIES

Reflecting the continued spectacular growth in population, business and industry in Los Angeles, the Water System's number of customers, services and facilities increased substantially during the 1956-57 year. The average number of customers served during the year was 536,788, compared with 522,929 the previous year. The total number of customers at the end of the year was 542,600.

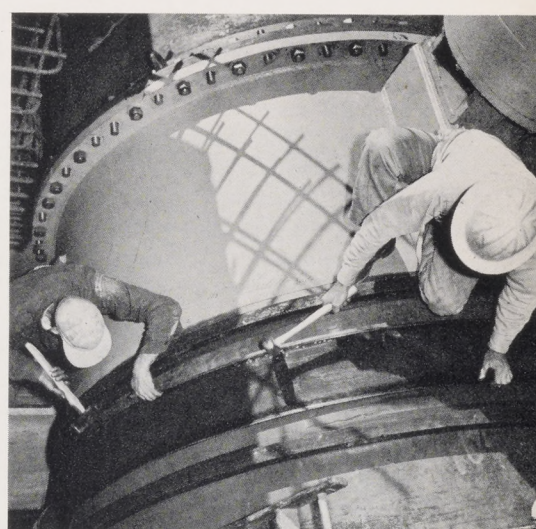
Water System facilities at the end of the year included



Interior of new San Pedro Pumping Plant shows powerful pumps to lift water to hillside service zones. Other pumping plants were also built to meet water needs in other hill and mountain residential areas.



Workmen install a section of 60-inch pipe during relocation of Hollywood Inlet Line. The line was moved to a new location to allow extension of the Hollywood Freeway.



Nine-foot butterfly valve being installed at the north end of Dry Canyon by-pass. The valve controls flow of water from the Los Angeles Owens River Aqueduct through the by-pass, when by-passing of Dry Canyon Reservoir is necessary.

water supply from the snowfields on the eastern slopes of the High Sierra range from distances as far as 338 miles to the north, met approximately 68% of the Water System requirements during the year. From this source the city obtained an average of 281.4 million gallons daily. Snowfall in the eastern High Sierra was below normal during the 1956-57 winter, resulting in forecasts of a seasonal runoff in 1957 of about 72% of the long-term average. This amount together with a large carry-over storage of water in aqueduct reservoirs assured capacity flow of the aqueduct with a surplus available for irrigation purposes on approximately 200,000 acres of Department-owned grazing, alfalfa and plow lands leased out for private operation in the Owens Valley, Long Valley and Mono Basin. As of June 30, 1957, storage in reservoirs of the Los Angeles Aqueduct System stood at 322,614 acre feet, 17,429 acre feet more than at the same time last year.

*Colorado River Aqueduct Supply*—To meet water needs above the amounts supplied by local sources and the Los

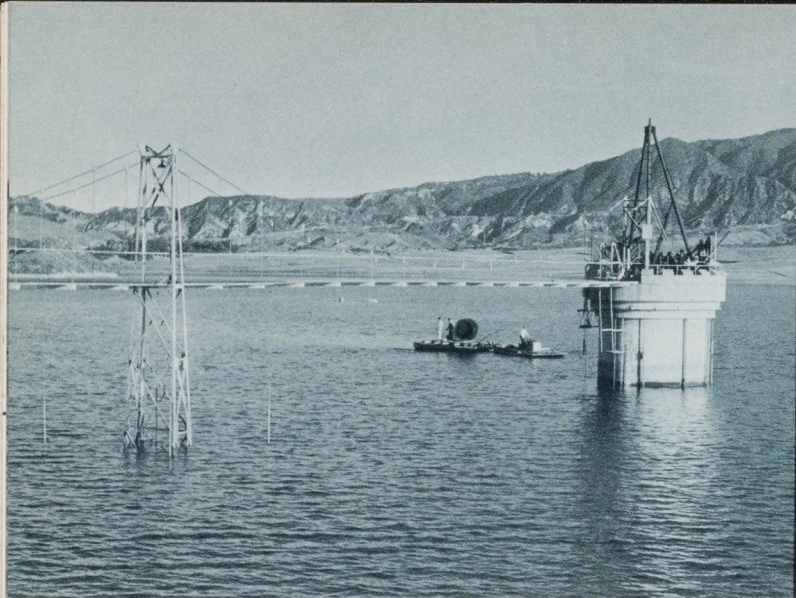
543,470 active service connections, an increase of 13,497 over the previous year; 5,880 miles of distribution mains, an increase of 134 miles; 80,530 gate valves, a gain of 1,469; and 34,970 fire hydrants, an increase of 1,025.

Areas of most rapid growth, requiring the largest proportion of water installations, were the San Fernando Valley district, western areas of the city, and the higher elevations of hill and mountain slopes within the city. Of a total of 1,114 tentative subdivision tracts submitted to the Water System to determine water needs, 941 were in the San Fernando Valley. Of the city's 454.7 square miles, about 81 square miles at higher elevations are now being supplied by pumped water systems, and about 100 square miles will ultimately require pumped water supply.

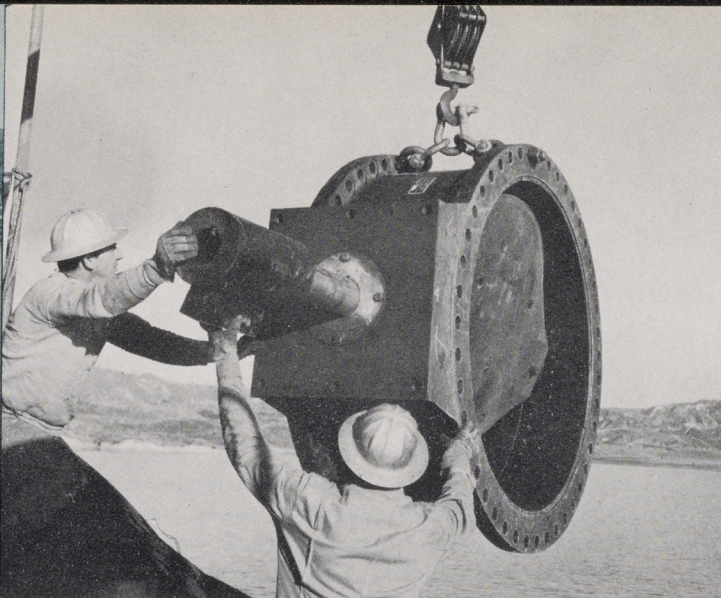
#### WATER QUALITY AND PURITY

Los Angeles' sources supply water of natural excellence in quality and purity. To maintain that quality and purity, meas-





One of seven new-type butterfly valves nears outlet tower at Lower Van Norman Lake. The new valves were installed to replace gate valves in use since 1915.



Crewmen guide the 54-inch valve as it is lifted from barge to the top of the tower. Valves were designed to operate a minimum of 50 years without maintenance of any kind.

ures taken during the year included numerous inspections, water quality tests, microscopic examinations, chemical surveys and analyses, mineral samplings, and bacteriological testing of water in reservoirs, pipelines and mains.

Pollution or contamination was guarded against through frequent inspections of watershed areas, reservoirs, tanks, wells and other water-producing facilities. Constant vigilance was maintained to prevent pollution of water supplies by industrial wastes. Installation of proper backflow prevention devices was required where necessary. Radiological testing was continued as part of the regular program for the maintenance of water quality and purity.

More than 36,000 inspections, field and laboratory tests, examinations and analyses were made during the year, and control measures through chlorination and other water treatment were applied as required.

#### WATER WORKS CONSTRUCTION

To keep pace with the rapid growth of the city, the Water System carried on a program of additions, extensions and improvements which totaled \$17,483,126 during the fiscal year. Included are new close-in reservoirs and elevated tanks, pumping plants, chlorinating stations, supply lines, mains and meters.

*Major Trunk Lines*—To meet the requirements of long distance transmission of water within Los Angeles' large area, internal supply lines of large capacity are necessary. One of the important new lines under construction in the 1956-57 year was the Granada Trunk Line designed to serve rapidly developing areas in the western San Fernando Valley from a direct connection with the Los Angeles Owens River Aqueduct near its terminus above the Van Norman Lakes. The pipeline is to extend from this point over a route of approximately 20 miles to a terminal reservoir or reservoirs to be established in the mountains rimming the valley on the west. The 48-inch diameter conduit will have a capacity of 55,000,000 gallons daily.

Portions of the Granada Trunk Line had been constructed previously from the Los Angeles Aqueduct westward to Zelzah Avenue at Rinaldi Street, a distance of 19,640 feet. During the 1956-57 year, construction began on the 21,600 foot second unit of the trunk line from Zelzah Avenue west to the DeSoto Reservoir, at an approximate cost of \$1,133,000. From DeSoto Reservoir, the pipeline, 60 inches in diameter,

will be extended farther west to Roscoe Boulevard at Cohasset Avenue, a distance of 30,000 feet, at an estimated cost of \$2,100,000. An additional installation of 60-inch and 54-inch pipe will extend the Granada line approximately 29,600 feet south to its terminus in the Santa Monica Mountains.

To allow for freeway development in the North Hollywood area, sections of the Hollywood Reservoir inlet line were relocated, with 2,315 feet of 60-inch pipe installed at a cost of \$236,000. A 712-foot section of the 66-inch River Supply Conduit was also relocated at a cost of \$61,445. Construction of a 26-inch trunk line in Jefferson Boulevard west of La Cienega Boulevard was completed over a distance of 9,600 feet at a cost of \$340,000.

#### NEW WATER FACILITIES FOR ELEVATED DISTRICTS

Increased subdivision activities and residential construction in mountainous portions of Los Angeles have required increased development of pumped water facilities during the 1956-57 year to serve these areas. Principal projects completed, under way, or planned, included the following:

*Sunland-Tujunga District*—The Rim Canyon Tank of 1,800,000 gallons capacity serving the Tujunga area was completed at a cost of \$186,000; the Highway-Highlands Tank of 1,000,000 gallons capacity serving the Highway-Highlands district was completed at a cost of \$73,000. Other work included the Rim Canyon Tank inlet-outlet line, consisting of 2,000 feet of 26-inch pipe, completed at a cost of \$60,000; 2,700 feet of 16-inch and 12-inch pipe in Hollyview Drive at a cost of \$59,000; and 2,700 feet of 24-inch pipe in Sunland Boulevard and Wheatland Avenue at a cost of \$75,000.

*San Fernando Valley District*—Winnetka Reservoir No. 2 with 1,240,000 gallons capacity was completed in the Santa Monica Mountains above Winnetka Avenue at a cost of \$118,000. The Winnetka Pumping Plant was under construction to provide an additional lift for water from the reservoir to higher areas in the mountains. Also under construction was the 26-inch Encino Pumping Plant discharge line, 2,740 feet in length, at an estimated cost of \$100,000. The new Van Norman Lakes Pumping Plant was partly completed with three pumping units installed at a cost of \$47,000 and two additional units planned.

*Hollywood Hills-Santa Monica Mountains Area*—To serve increased residential development in the vicinity of Laurel



Canyon Boulevard, a new 26-inch supply line was completed from the Moorpark Pumping Plant to the vicinity of Laurel Canyon Boulevard and Fryman Road, a distance of 8,060 feet, at a cost of \$257,000. It is planned to extend this supply line another 4,600 feet to the Laurel Canyon Reservoir at an estimated cost of \$138,000. From the Laurel Pumping Plant adjoining the reservoir, 5,140 feet of 16-inch supply line was installed at a cost of \$97,000 to the Firenze Tank in the Mulholland Drive area, and the 1,000,000 gallon Firenze Tank built at a cost of \$80,000. The 1,400,000 gallon Cyprian Tank in the Lookout Mountain-Wonderland district was under construction at an estimated cost of \$144,500. The \$55,000 Wonderland Pumping Plant was completed.

The Roscomare Tank No. 2 of 1,000,000 gallons capacity was completed at a cost of \$90,000, and a 12-inch supply line from the tank extended 4,430 feet to Casiano Drive, at a cost of \$85,200. Under construction during the year were other supply lines including the 24-inch Coldwater Canyon Pumping Plant discharge line, 2,000 feet in length, estimated to cost \$60,000, and the 12-inch Benedict Canyon supply line, 6,780 feet in length, estimated to cost \$88,000. Also under construction during the year was the Coldwater Canyon Pumping Plant, estimated to cost \$198,000.

**Northeast Los Angeles**—In the hilly northeastern section of Los Angeles, the Richelieu Tank outlet line, consisting of 3,315 feet of 24-inch pipe and 540 feet of 16-inch pipe was installed at a cost of \$110,000.

**Harbor District**—The San Pedro Pumping Plant was completed at a cost of \$226,000, with a capacity of 14½ million gallons daily, to supply the Summerland Reservoir and Ninth Street Tank serving the 400-foot and the 599-foot levels in the hill area overlooking Los Angeles Harbor.

#### OTHER WATER WORKS

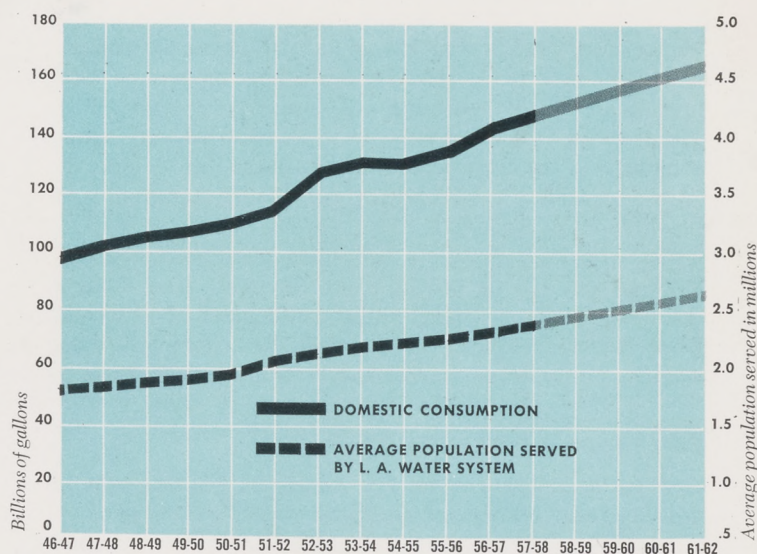
The Water System continued to develop and improve sources of supply during the year. The Pollock Wells near Riverside Drive and Glendale Boulevard, tapping the Los Angeles River underground basin, were being improved at an estimated cost of \$274,250.

Maintenance and improvement work was also carried out along the Los Angeles Owens River Aqueduct System. The Dry Canyon Reservoir By-Pass Line, completed during the previous year, was connected to the aqueduct following the installation of gate structures. The 9½ foot by-pass line permits diversion of the aqueduct flow around the Dry Canyon Reservoir when the reservoir is muddied by storm water runoff, enabling clearer water to be delivered to Los Angeles.

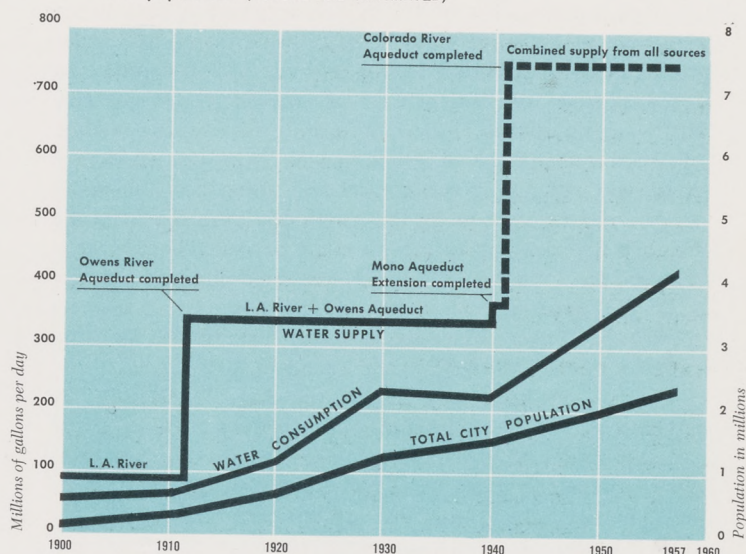
Other maintenance and improvement work on the aqueduct itself included the sandblasting and cement lining of some siphon sections and the installation of welded steel pipe inside old siphon pipes. Approximately 8,000 feet of the cement-lined canal section of the aqueduct in Owens Valley was relined by the placement of 4-inch reinforced concrete slab on the side walls and invert. Another section of approximately 21,500 linear feet of open channel was coated with gunite.

The Water System began establishment during the year of a new East San Fernando Valley District Headquarters on a seven-acre site acquired at Coldwater Canyon Avenue and Saticoy Street. Construction began on eight buildings which will handle equipment and supplies and facilities for Water System construction and service crews. Buildings and yard facilities will cost approximately \$945,000 exclusive of land.

Growth in water consumption (ACTUAL AND ESTIMATED)



Water supply, consumption and Los Angeles City total population (ACTUAL AND ESTIMATED)



Eleven-ton section of new discharge line from Moorpark Pumping Plant being lowered into place. Section was specially designed to allow the line to cross over the Los Angeles River.



## WATER FOR THE FUTURE

The key factor in Los Angeles' spectacular growth is an ample supply of "imported" water. The limitations imposed by local supplies are roughly indicated in the statistics for the 1956-57 year showing that water from local sources met only about one-fourth of the city's needs. The remainder was "imported" by means of the Los Angeles Owens River Aqueduct and Colorado River Aqueduct.

Los Angeles presently is depending principally upon its local sources and its Owens River Aqueduct, and using a relatively small percentage of its entitlement of Colorado River Aqueduct water. The Colorado River supply assures ample water for the city's growth to 1970 and possibly beyond.

### WATER FROM THE FEATHER RIVER

Looking beyond that point, Los Angeles is taking a leading role along with other communities and water-serving agencies in advancing the great \$1½ billion California State-planned Feather River Project.

This project will conserve and use the waters of the Feather River, largest tributary of the Sacramento River, with an average annual flow of 4½ million acre feet. A dam on the river five miles above Oroville, California, some 560 miles north of Los Angeles, will form a reservoir of 3½ million acre feet capacity. The dam will be the world's largest masonry structure, higher than Hoover Dam, and with a greater volume of concrete than massive Grand Coulee Dam. The water thus conserved will supply agricultural and urban needs in many water deficient areas along the length of California from the Feather River region to the Mexican border. The State has reserved for Southern California's use, including Los Angeles, 1,773,000 acre feet of water to be delivered annually by the Feather River Aqueduct, a supply 50% larger than the capacity of the Colorado River Aqueduct.

Funds have been provided by the State Legislature for engineering studies and surveys of aqueduct routes and for the acquisition of lands and rights-of-way for the two principal storage facilities, the Oroville and San Luis reservoirs. In 1957, the State Legislature appropriated \$25,190,000 for further preliminary work including relocation of utilities and highway facilities at the Oroville dam and reservoir site.

### EXPANSION OF WATER DISTRIBUTION FACILITIES

To make increased use of existing water sources and provide for the growing water needs of Los Angeles, the Department of Water and Power is carrying on an \$85 million five-year expansion program of water facilities within the city.

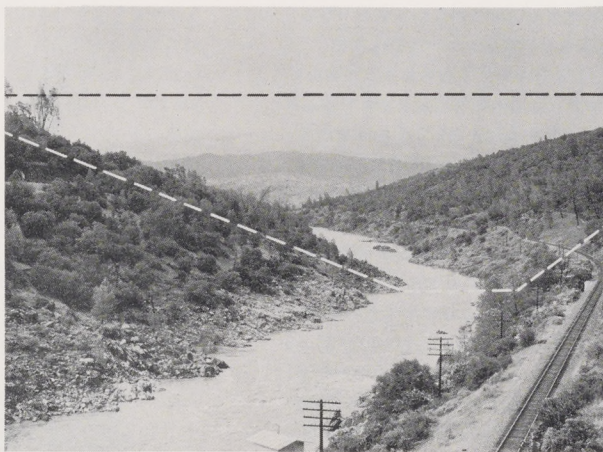
Surveys of new reservoir sites are being conducted by the Water System in various locations of Los Angeles. In the western San Fernando Valley, sites are being explored for the large new Lippincott Reservoir, terminal storage facility for the Granada Trunk Line. An original site under study was visualized as a location for a 5,000 acre foot reservoir estimated to cost \$4,200,000. Other sites under consideration offer possibilities for reservoirs of much larger capacity. Another proposed facility for the western San Fernando Valley area is the Mason Avenue Reservoir of 1,100 acre foot capacity, estimated to cost about \$3,000,000. Enlargement of the existing Encino and Maclay reservoirs is also contemplated.

To serve the central and western portions of Los Angeles, substantial enlargement of the Upper Franklin Canyon Reservoir is contemplated. Proceedings have been initiated for the acquisition of 168 acres of land for future development of a reservoir of approximately 8,727 acre feet. Estimated cost of the project is \$5,390,000. For the Hollywood Reservoir, a new outlet tower and tunnel are planned, with a new 60-inch outlet line extending approximately two miles to connect with the Eagle Rock-Hollywood Conduit and the Van Ness Avenue Trunk Line. Estimated cost of this project is \$1,315,000.

The Granada Trunk Line serving the west San Fernando Valley will be completed in stages, extending a total of about 20 miles from its connection with the Los Angeles Aqueduct penstock to its terminal reservoir. The 60-inch and 48-inch conduit will have a capacity of about 55,000,000 gallons daily to serve the west Valley.

Other major pipelines planned: Encino Reservoir 60-inch inlet line, over five miles in length from the trunk line in Roscoe Boulevard to the reservoir; West Fourth Street trunk line, a 60-inch conduit, extending from the Van Ness trunk line westward about two miles; and the 48-inch Slauson Avenue trunk line from La Brea Avenue to La Cienega Boulevard.

Expansion of the Water System's pumping facilities, storage and supply lines to meet the increasing need for water at higher elevations will also continue at a rapid pace. Included in present plans are 18 new tanks and small reservoirs, and 10 new pumping stations for the city's pumped water systems.

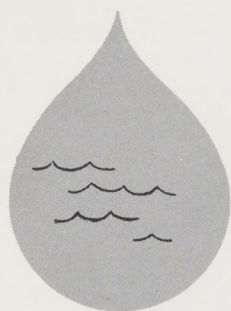


Site of the proposed Oroville Dam of the Feather River Project, with dotted lines showing the future approximate location of the dam in the Feather River Canyon, about five miles above the town of Oroville. As planned, the structure would be higher than Hoover Dam and contain more concrete than Grand Coulee Dam.

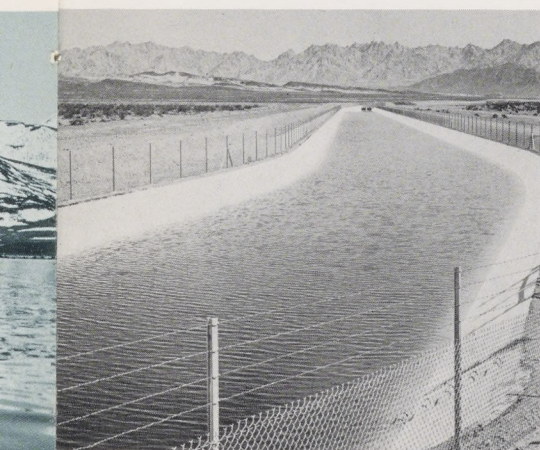


Crowley Lake in the Eastern High Sierra, largest reservoir in the Los Angeles city-owned Water System, with a capacity of 183,465 acre feet of water. The reservoir, created by an earth-fill dam built by the Department across Long Valley 300 miles north of Los Angeles, provides storage of almost six months supply of water for the city.





## Water System Facts *in brief*



Colorado River water is delivered to Los Angeles and other communities in Southern California by the Colorado River Aqueduct. A system of canals, tunnels, pipe lines and pump lifts brings the water across mountains and desert from Lake Havasu Reservoir, impounded by Parker Dam on the Colorado River.

### USE OF WATER

|   | 1946-47    | 1955-56    | 1956-57    | 1956-57<br>Increase<br>(Decrease)<br>Over<br>1946-47 |
|---|------------|------------|------------|--|
| Average Population Served . . . . .           | 1,729,000  | 2,223,000  | 2,284,000  | 32%  |
| Active Services . . . . .                     | 349,007    | 529,973    | 543,470    | 56%  |
| Meters in System* . . . . .                   | 342,794    | 539,152    | 552,364    | 61%  |
| Daily Consumption (Gals.) . . . . .           | 328.8 mil. | 394.7 mil. | 416.9 mil. | 27%  |
| Daily Use per Capita (Gals.)** . . . . .      | 152        | 165        | 171        | 13%  |
| Water Sales for Fiscal Year (Gals.) . . . . . | 114.0 bil. | 131.7 bil. | 138.8 bil. | 22%  |
| Maximum Daily Demand (Gals.) . . . . .        | 530.0 mil. | 756.2 mil. | 757.5 mil. | 43%  |
| Peak Hour Demand (Gals. per Hour) . . . . .   | 30.9 mil.  | 55.7 mil.  | 54.0 mil.  | 75%  |
| Annual Pumpage (Gals.) . . . . .              | 55.9 bil.  | 67.1 bil.  | 73.9 bil.  | 32%  |

### GROWTH OF SYSTEM

|  |               |               |               |     |
|--|---------------|---------------|---------------|-----|
| Utility Plant (less depreciation) . . . . .    | \$137,914,620 | \$234,885,510 | \$246,325,110 | 79% |
| Reservoirs and Tanks . . . . .                 | 91            | 97            | 100           | 10% |
| Storage Capacity, Acre Feet . . . . .          | 402,285       | 406,525       | 406,447       | 1%  |
| Miles of Conduit . . . . .                     | 24.4          | 35.0          | 39.6          | 62% |
| Total Miles, Distribution Lines . . . . .      | 4,427.3       | 5,756.4       | 5,879.9       | 33% |
| Volume of Distribution Lines (Gals.) . . . . . | 137.9 mil.    | 189.3 mil.    | 192.7 mil.    | 40% |
| Main Gate Valves in System . . . . .           | 62,077        | 79,061        | 80,530        | 30% |
| Fire Hydrants . . . . .                        | 23,283        | 33,945        | 34,970        | 50% |

### WATER SUPPLIED TO DISTRIBUTION SYSTEM

|  |         |         |         |      |
|--|---------|---------|---------|------|
| From L. A. Aqueduct, Cu. Ft. per Second . . . . .              | 374.4   | 419.9   | 435.4   | 16%  |
| From Local Supply, Cu. Ft. per Second . . . . .                | 124.1   | 147.9   | 163.7   | 32%  |
| From Metropolitan Water District, Cu. Ft. per Second . . . . . | 10.2    | 42.9    | 46.0    | 351% |
| Storage in Aqueduct Reservoirs, Year End, Acre Feet . . . . .  | 237,309 | 305,185 | 325,354 | 37%  |

### FINANCIAL

|   |               |               |               |      |
|---|---------------|---------------|---------------|------|
| Assets (less provisions for depreciation) . . . . . | \$156,436,797 | \$249,603,793 | \$262,199,455 | 68%  |
| Funded Debt . . . . .                               | 45,135,750    | 88,199,000    | 93,211,000    | 107% |
| Total Income . . . . .                              | 17,455,364    | 28,985,079    | 30,835,334    | 77%  |
| Net Income . . . . .                                | 4,822,906     | 5,830,600     | 5,608,529     | 16%  |

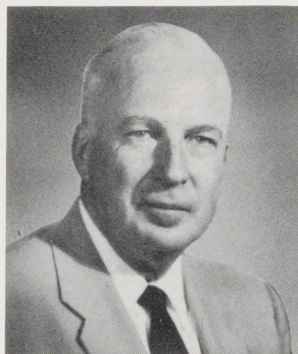
\*Includes Active and Inactive.

\*\*Irrigation Water Excluded.

Statistical reports for the 10 years ending June 30, 1957, including tables and charts, may be obtained upon request to the Department of Water and Power.



IVAN L. BATEMAN  
*Chief Electrical Engineer  
and Assistant Manager*



## Power System

### Accomplishments 1956-57

In Los Angeles, where more population is being added each year than in any other U.S. city, with corresponding advances in business and industry, the need for large expansion of the Power System presents a great and continuing challenge.

To meet this challenge successfully, the Power System of the Los Angeles Department of Water and Power, during the fiscal year 1956-57, continued its accelerated rate of growth, serving thousands of new customers and providing generating and other facilities to meet the fast-rising peak demands.

Of outstanding importance during the 1956-57 year were:

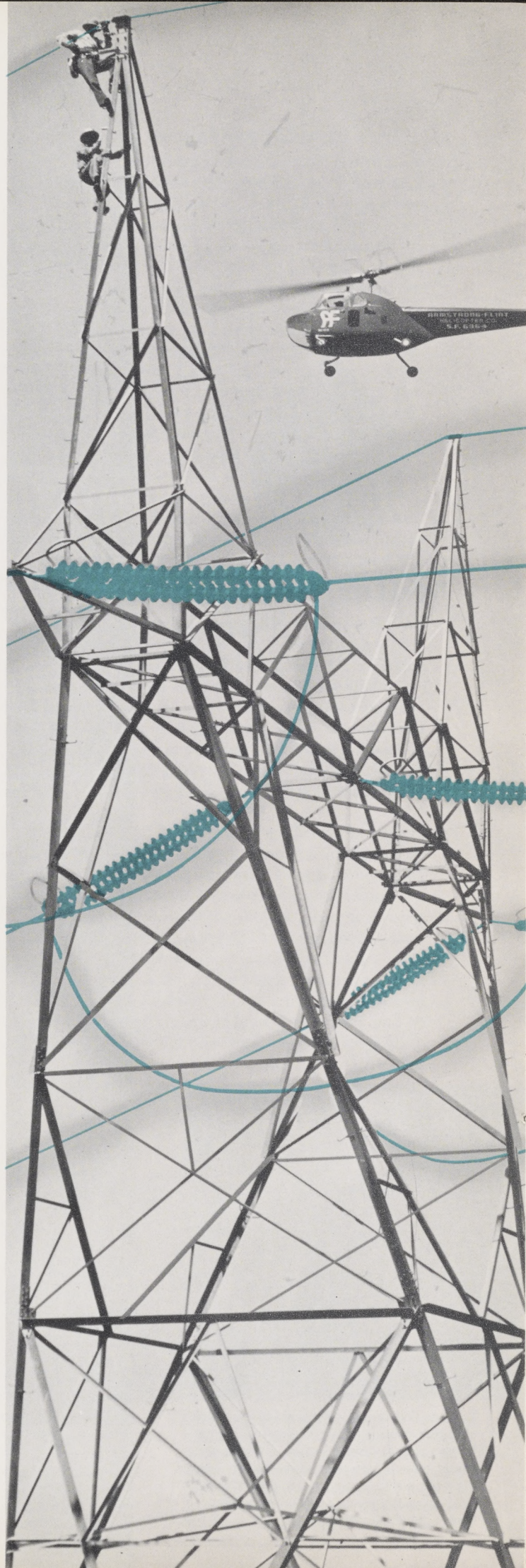
- 1) Start of construction on the great new Scattergood Steam Plant.
- 2) Major extensions and expansions of the electric distribution system.
- 3) Completion of Pleasant Valley Dam.
- 4) A 25% increase in bonding capacity, permitting continued long-range financing of new electric facilities.
- 5) Establishment of higher electric rates, which became effective December 1, 1956, representing an average increase of 5.9%.
- 6) Overcoming of the fuel shortage problem of the previous year by large purchases of fuel oil.
- 7) Rising costs for fuel necessitating a proposed fuel cost adjustment to the electric rates.

#### INCREASES IN CUSTOMERS AND POWER USE

During the year, the average number of customers served increased to 857,981, a gain of 28,923 over the previous year. At the close of the fiscal year, there was a total of 868,938 customers of the Power System.

Sales of electric energy totaled 5,780,000,000 kilowatt hours for all classes of customers, an increase of 380,000,000 kilowatt hours over last year. Excluding sales of energy to other electric utilities, the Power System's energy sales represented an increase of 7.3% over the preceding year.

Residential sales were 1,558,000,000 kilowatt hours, up 6.3% over the previous year; commercial sales were 2,521,000,000 kilowatt hours, up 7.9%; industrial sales were 1,491,000,000 kilowatt hours, up 7%. The average annual consumption of electricity per customer was 2,166 kilowatt hours for residential users, 19,775 kilowatt hours for commercial users, and 164,083 kilowatt hours for industrial customers.



Steel tower transmission lines transmit vital electric energy to Los Angeles from nearby steam power plants and hydroelectric plants as far as 300 miles away. The lines are patrolled regularly by ground crews and helicopter as part of the operation and maintenance of the Power System.



## GENERATING CAPACITY AND PRODUCTION

Net generation of energy for the Department's customers reached a new peak on January 28, 1957 of 1,280,000 kilowatts, exceeding the previous year's peak by 93,000 kilowatts.

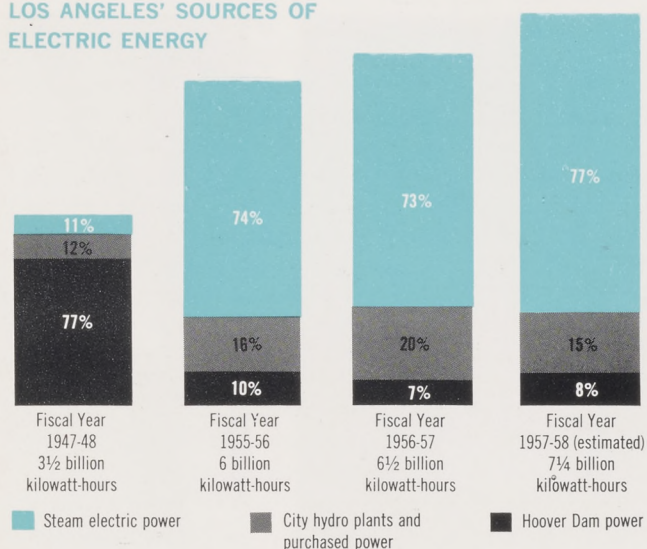
Increased demands for electric energy were met by a large increase in production. The gross total of energy generated, purchased and received through interchange during the year was 7,000,401,652 kilowatt hours, an increase of about 441,000,000 kwh over the previous year. Net energy generated for Department customers totaled 6,486,000,000 kwh, an increase of 454,000 kwh over the previous year.

The over-all pattern of operation of the generating plants was similar to that of the previous year. Steam electric power plants provided 73% of the net energy for load, city hydro plants and purchased power furnished 20%, and Hoover Dam, 7%. The changes which have occurred in the past several years are indicated by the fact that in the 1947-48 fiscal year, steam power plants supplied 11% of the city's electric energy; city hydro plants and purchased energy, 12%; and Hoover Dam, 77%. The percentage of energy furnished by Hoover Dam in 1956-57 was the smallest in the history of the Power System, representing the effect of continued water deficiency at Hoover Dam and the increased use of Hoover energy by other allottees, in combination with the over-all load growth of the Department of Water and Power. Generation at Hoover Dam during the year was only 62.7% of firm energy for all allottees. However, with Colorado River inflow for the summer of 1957 expected to rebuild the level of water storage in Lake Mead, generation of 75.5% of firm energy was provided for in the 1957-58 operating year at Hoover Power Plant, with the possibility of an increase later in the year.

Though no major additions were made to the Department's generating units, since all units at the new Valley Steam Plant were on the line prior to the beginning of the fiscal year, the net dependable generating capacity of the Power System was increased from 1,643,000 to 1,687,000 kilowatts, the change in general reflecting actual capacities developed and obtained by the Valley Steam Plant units.

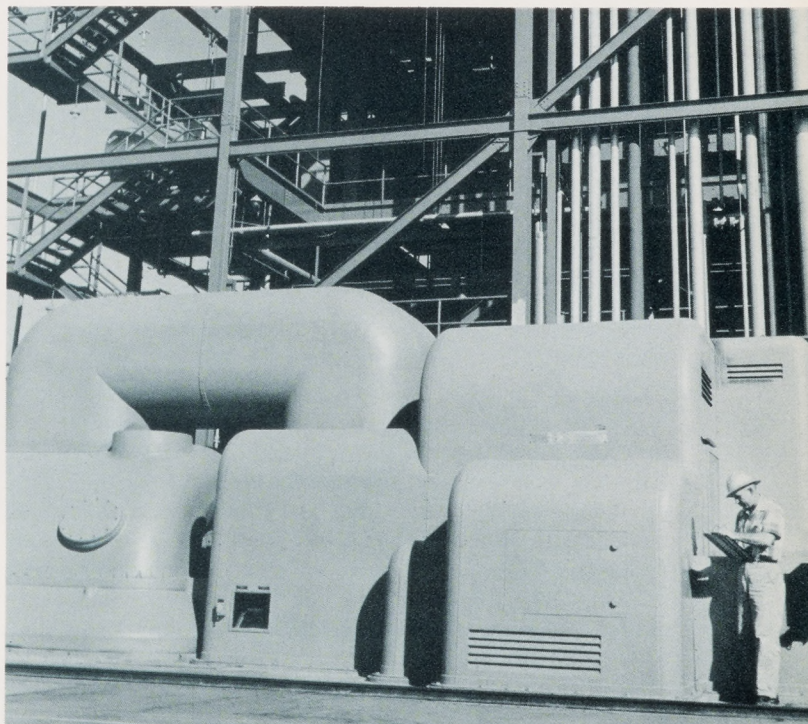
The Department during the year made fuel oil purchases of 7,568,000 barrels at contract prices totaling \$20.4 million.

## LOS ANGELES' SOURCES OF ELECTRIC ENERGY



The posted price of oil increased 75¢ per barrel during the fiscal year. However, the necessary fuel was obtained and no shortage was experienced during the fiscal year.

All gas which was available was obtained and used for the operation of the steam power plants, and accounted for 37% of the total fuel requirements. Under new contracts negotiated during the year, a larger supply of gas is expected to be available for power generation.



One of the four huge turbine-generators at the Valley Steam Plant. This new power plant, provided about 46 per cent of the city's electric energy used during the 1956-57 year.

## PROMOTION OF POWER SALES

To increase power revenues through greater sales, energetic campaigns were undertaken particularly in the residential field, supported by increased advertising. These paralleled the nationwide Live Better Electrically campaign and similar campaigns by other electric utilities in the area. Increased advertising and sales promotion in the home appliance field brought improved sales of electric dryers, electric ranges, and air conditioning equipment. Strong advances were noted in the installation of built-in electric appliances in new homes. Effective advertising and promotion also contributed to the wider acceptance of better home wiring.

Industrial and commercial applications of light and power were also expanded with the help of continuous promotion and advertising support. Los Angeles' rapid industrial growth was continued with the establishment of 55 new industries and the expansion of 145 existing industries during the fiscal year, representing an investment of more than \$70 million.

## CONSTRUCTION OF ELECTRIC FACILITIES

To meet the ever-increasing electric demands and build ahead for growing requirements, the Department invested a total of \$39,268,170 in additions, extensions and improvements to the Power System during the 1956-57 fiscal year.



**Generating Facilities**—During the year, the completion of the \$81 million Valley Steam Plant provided the Department with a first full year of operation of all units of this 520,000 kilowatt plant. The Valley Steam Plant supplied approximately 46% of all Los Angeles' electric energy needs in the 1956-57 year. The plant was officially dedicated on May 17, 1957, followed by an open house inspection which drew a total of 12,000 visitors.

Completion of the Pleasant Valley Re-regulating Reservoir in November of 1956 made possible full peaking operations at the Department's three hydroelectric plants in the Owens Gorge. A compacted earth-fill dam about 2½ miles downstream from the Control Gorge Power Plant, impounds a 3,825 acre-foot reservoir which re-regulates water discharged from the Gorge power plants, eliminating rapid fluctuations in water levels in the Owens River below. A power plant of 3,200 kilowatts capacity is under construction below the dam. The cost of the reservoir and power plant project is estimated at \$3,750,000.

Construction began during the year on the first units of the Scattergood Steam Plant on a 57.5 acre site on the Los Angeles ocean front south of Playa del Rey. Initial work called for the preparation of the site, including removal of some 3,500,000 cubic yards of sand, the installation of cooling water lines and other facilities for the first four units, and the installation of the first two 156,250 kilowatt turbine generating units. By the end of the fiscal year, the site excavation under contract was nearing completion, and a considerable portion of the foundations for the first two units had been poured. A contract for construction of two cooling water lines to circulate sea water through the plant had been let at a price of \$3,026,000, and a structural steel contract awarded at a contract price of \$1,384,736. Various other purchase contracts were also awarded in addition to those previously awarded for the first two turbine generating units, boilers and associated equipment.

Problems of air pollution control resulting from the operation of steam electric generating plants continued to receive serious study and resulted in important steps being taken to improve conditions. At the Harbor Steam Plant, replacement

of eight existing stacks, 125 feet in height, with five new stacks, 250 feet in height, began for the purpose of obtaining more efficient dispersal of stack emissions, better combustion and improved atmospheric conditions in the vicinity of the plant. The project is estimated to cost about \$700,000.

The Department is participating with other electric utilities of the Los Angeles region in the joint research of air pollution problems, and also carrying on independent research.

**Transmission Lines and Receiving Stations**—Additional transmission capacity was provided for the transmission line connecting the San Fernando Valley with western areas of Los Angeles, by completion of a second 138,000 volt circuit between Receiving Station J in the west San Fernando Valley and Receiving Station K in western Los Angeles. This included overhead construction across the Santa Monica mountains to Kenter terminal in Brentwood and an underground line from that point to Receiving Station K.

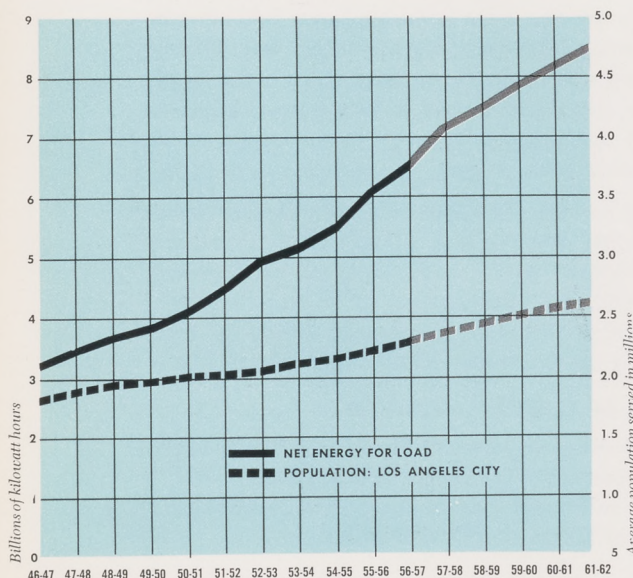
The 34,500 volt sub-transmission system was also extended with lines built to new distributing stations and others installed for improvement of service and operating conditions.

The rebuilding of Receiving Station A, Los Angeles' first municipal power receiving station, in connection with its changeover from 115,000 volt to 138,000 volt operation was practically completed with the permanent installation of three, three-phase 100,000 kva transformer banks.

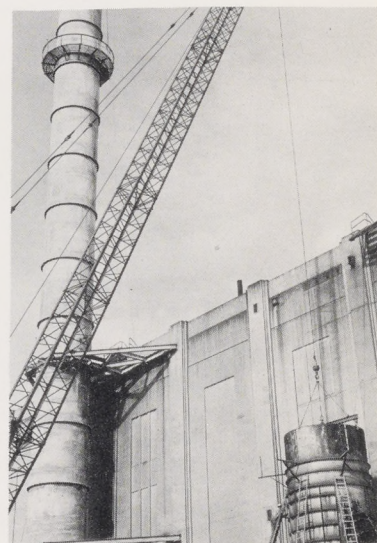
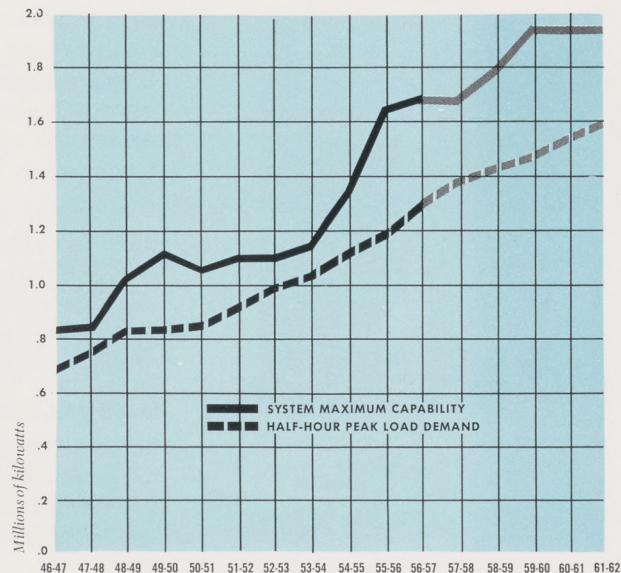
Appreciable new economies were also effected by the installation of supervisory control equipment in receiving stations for the remote control of eight distributing stations, making 39 distributing stations that are supervisory controlled.

**Distributing Stations**—Three new power distributing stations were completed during the year and placed in service: Station 53, at 4030 Crenshaw Boulevard, with a capacity of 40,000 kva; Station 64, at 14860 Ventura Boulevard, with an initial capacity of 25,000 kva; and Station 66, at 12200 San Vicente Boulevard, with an initial capacity of 20,000 kva. The first is a partially indoor type, and the other two are outdoor wall-enclosed stations. All three are supervisory controlled. New designs being used in the Department's distributing stations are effecting savings of more than 25% in costs by embodying tilt-up wall construction and the place-

Population and electric energy requirements  
(ACTUAL AND ESTIMATED)



Demand and capability  
(ACTUAL AND ESTIMATED)

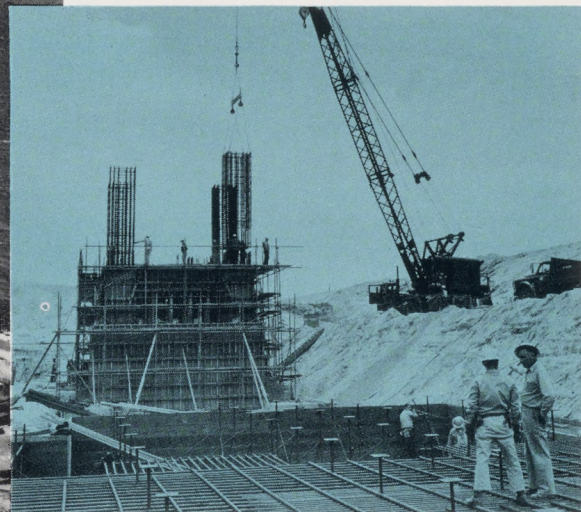


New 250-foot stacks were erected at the Harbor Steam Plant to provide better dispersal of stack emissions and improve atmospheric conditions in the plant area.





Aerial view shows excavation of site and early construction work on new Scattergood Steam Plant, on the ocean front near the Los Angeles-El Segundo city boundary. Work began on the first two generating units and related facilities, including the cooling water lines from the sea.



Closeup of Scattergood Steam Plant construction shows progress on foundations and other structural features for the initial two 156,000 kilowatt turbine-generating units.

ment of electrical equipment in enclosed courtyards. The attractive external appearance contributes to good public relations of the Department in these communities.

A new distributing station at Ventura Boulevard and Sylvia Avenue was nearing completion at the end of the year.

The Department's first underground distributing station, a reinforced concrete building, 156 by 101 feet, was under construction in the Los Angeles Civic Center at 330 North Hill Street adjoining the Hollywood Freeway. Its roof will be covered over and landscaped. The station, with an initial capacity of 40,000 kva, is estimated to cost \$1,300,000.

**Distributing System**—At the year's end, there were 109 distributing stations in operation with a total capacity of 1,785,262 kilovolt amperes, as compared with 1,661,512 kva the year before. Industrial sub-stations were increased in number from 507 to 543, with an increase in capacity from 568,331 kva to 646,655 kva; commercial sub-stations, from 493 to 507, and from 305,474 kva to 318,524 kva; overhead distribution extensions included 23 new feeder circuits, 128 miles of primary circuits, 111 miles of secondary circuits and 164 miles of distribution pole lines; underground distribution extensions included 27 miles of primary circuits, 8 miles of secondary circuits, and 38 miles of service cable. In the overhead low voltage system at the end of the year, there were in operation 4,921 miles of primary circuits, 3,388 miles of secondary circuits, and 5,858 miles of distribution pole lines; in the underground low voltage system, 459 miles of primary and secondary conduit lines, 583 miles of service conduit, and 3,627 miles of primary, secondary and service cables. The total of overhead and underground distribution transformers

was 62,398, with total capacity of 1,614,722 kva. Street lights in service numbered 108,417, an increase of 3,954 over the previous year. Electric meters in service totaled 936,286, an increase of 34,426 over the preceding year.

**Other Construction**—A new heavy mechanical shops building was under construction at a contract price of \$829,675 as an addition to the group of plant maintenance and repair structures at 1630 North Main Street. A new salvage warehouse was completed at the same location. A new commercial office and headquarters for the Department's customer services in the San Fernando Valley, including a home electric demonstration center, was completed at 6550 Van Nuys Boulevard at a cost of \$356,000. Other structures completed during the year included offices, warehouses and other buildings at various district headquarters locations. Land was purchased for a general service headquarters for the San Fernando Valley.

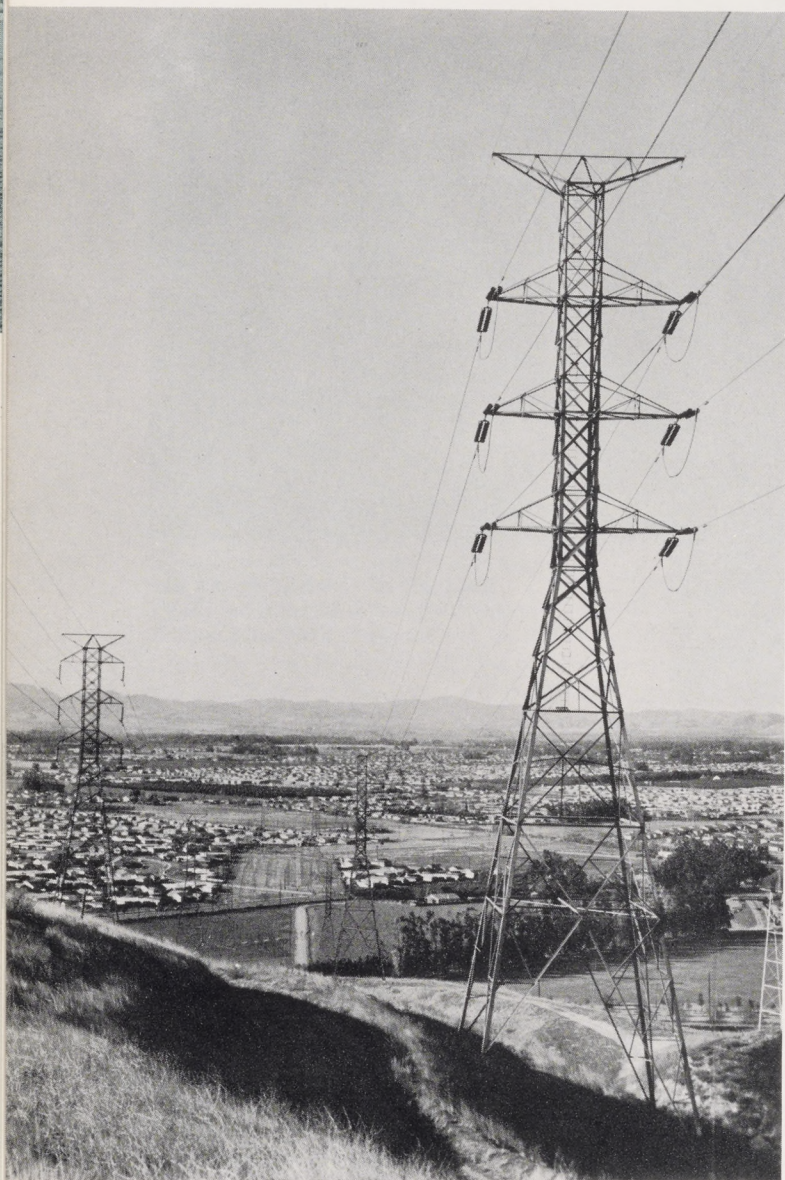
**Miscellaneous**—A twelve-channel microwave radio relay system between Los Angeles and the Valley district headquarters at Van Nuys was installed, with a repeater station located on Lookout Mountain. Various other improvements were made to communications facilities.

The Power System's transportation fleet traveled a total of almost 14,000,000 miles in performing the work of the system during the year. Emphasis upon safety resulted in a decreasing accident rate in fleet operation and in other activities.

To insure a large supply of gas as fuel for the new Scattergood Steam Plant, the Department participated in a joint venture to build a 30- and 20-inch gas extension line a distance of about 5½ miles to serve the new plant and an adjacent steam power plant of another utility.



## POWER FOR THE FUTURE



New power transmission lines channel more electric energy into the fast-growing San Fernando Valley, giving additional vital impetus to the remarkable development of this large section of the City of Los Angeles.

The increasing use of electricity in the home, in commerce and industry, places upon the electric utility a major responsibility for continuity of service and the assurance that power will be available wherever and whenever the needs arise. This requires constant system planning and construction in anticipation of the growing requirements. To provide ample electric power for the rapidly growing City of Los Angeles is the objective of a five-year program of construction of the Department of Water and Power involving an estimated expenditure of \$275,000,000 for power generating, transmission, receiving and distributing facilities.

### SCATTERGOOD STEAM PLANT

The city's next major power generating facility, expected to begin providing additional generating capacity in the 1958-59

fiscal year, is the new Scattergood Steam Plant. Work is under way on construction of the plant on a 57.5-acre site on Los Angeles' ocean front south of Playa del Rey.

The first two turbine generating units under construction are of 156,250 kilowatts capacity each. These units together with common facilities for the first four units of the plant are estimated to cost \$60,000,000. The sizes of the additional units are still under study, but ultimate capacity with six units installed is expected to exceed 1,200,000 kilowatts, about equivalent to the generating capacity of Hoover Dam. The first two turbines will be tandem-compound, triple-flow exhaust type units and will operate at 3600 revolutions per minute. Boilers will be 150 feet in height and capable of producing 1,200,000 pounds of steam per hour at 1,850 pounds per square inch, at 1,000 degrees Fahrenheit with 1,000 degrees Fahrenheit reheat temperature. Fuel oil consumption at full load will be approximately 6,000 barrels per day per unit.

Intake and discharge lines now under construction will circulate cooling water from the ocean through two 12-foot diameter pipes, 1,953 feet and 1,567 feet in length, circulating up to 360,000 gallons per minute. The plant will be semi-enclosed. A modern attractive external appearance will be supplemented by proper landscaping.

### HAYNES STEAM PLANT

This plant is also planned for an early start on a 200-acre site on the San Gabriel River channel near the ocean at Alamitos Bay. The Haynes Steam Plant will have an ultimate capacity of approximately 1,300,000 kilowatts. It is anticipated that the first unit will be ready for service during the 1961-62 fiscal year. The plant will be of the outdoor type with housing to be provided for control room and delicate operating equipment.

### HYDROELECTRIC PLANTS

A large power dam in Bridge Canyon, on the Colorado River, about 117 miles upstream from Lake Mead, has been under consideration as a possible Department of Water and Power project, beginning as far back as 1943, when a series of studies of the project was started. Application to the Federal Power Commission was prepared requesting a preliminary permit for the development of a dam and power plant project at Bridge Canyon with transmission lines to Los Angeles. The Bridge Canyon site would enable development of approximately 750,000 kilowatts of power.

### NUCLEAR POWER

To be fully prepared to produce electricity from atomic energy when the process becomes economically practical, the Department has been maintaining close contact with atomic power developments and training key personnel for this work.

### OTHER SYSTEM PLANNING

System planning is also going forward for extension of the Department's transmission, receiving and distributing systems. Problems of long distance energy transmission at high voltages are receiving special study in the event new power plant facilities should be established outside the Los Angeles area.

Enlargement of the system of major bulk power receiving stations, establishment of new distributing stations, and the extension of the overhead and underground distribution systems are being planned to keep ahead of the rapid growth in the electrical load.





## Power System Facts *in brief*

### POWER PRODUCTION IN KILOWATT-HOURS

(Including all generation of Hoover units connected to DWP system)

|   | 1946-47       | 1955-56       | 1956-57       | 1956-57<br>Increase<br>(Decrease)<br>Over<br>1946-47 |
|---|---------------|---------------|---------------|--|
| Hoover Energy (incl. U.S. Government and Public Allottee use) . . . . .         | 2,413,916,000 | 818,996,000   | 686,232,000   | (72%)  |
| Hydro Plant Production (Aqueduct, Owens Gorge and Owens Valley) . . . . .       | 456,891,000   | 840,245,000   | 869,454,000   | 90%  |
| Steam Plant Production . . . . .  | 921,447,000   | 4,690,925,000 | 5,013,186,000 | 444%   |
| Received from Interchange and Purchases other than Hoover . . . . .             | 218,947,000   | 208,877,000   | 431,530,000   | 97%  |
| Total—Gross Energy Generated, Purchased and Received from Interchange . . . . . | 4,011,201,000 | 6,559,043,000 | 7,000,402,000 | 75%  |

### POWER USE

|   |               |               |               |       |
|---|---------------|---------------|---------------|-------|
| Domestic Users . . . . .  | 481,786       | 693,286       | 719,302       | 49%   |
| Commercial Users . . . . .  | 99,428        | 124,850       | 127,482       | 28%   |
| Industrial Users . . . . .  | 7,656         | 8,938         | 9,088         | 19%   |
| Miscellaneous Customers . . . . .   | 1,234         | 1,984         | 2,109         | 71%   |
| Total Customers—All Classes . . . . .   | 590,104       | 829,058       | 857,981       | 45%   |
| Sales to Ultimate Consumers—Kilowatt-Hours . . . . .  | 2,736,146,000 | 5,386,012,000 | 5,776,878,000 | 111%  |
| Sales to other Utilities—Kilowatt-Hours . . . . .   | 323,165,000   | 13,400,000    | 2,888,000     | (99%) |
| Used in Operations and Lost in Transformation, Transmission and Distribution—Kilowatt-Hours . . . . . | 555,206,000   | 938,020,000   | 1,025,302,000 | 85%   |
| Average Annual Kilowatt-Hours per Domestic Customer . . . . .   | 1,450         | 2,114         | 2,167         | 49%   |
| Estimated Annual Revenue from New Business . . . . .  | \$ 3,130,000  | \$ 5,318,677  | \$ 6,991,000  | 123%  |

### GROWTH OF SYSTEM

|  |               |               |               |      |
|--|---------------|---------------|---------------|------|
| Utility Plant (less accumulated provisions for depreciation) . . . . .               | \$182,188,141 | \$466,847,262 | \$493,643,038 | 171% |
| Generating Stations—Net Dependable Capability*—Kilowatts . . . . .                   | 828,000       | 1,643,000     | 1,687,000     | 104% |
| Transmission Circuits—34,500 to 287,500 volt . . . . .                               | 1,035 miles   | 1,402 miles   | 1,418 miles   | 37%  |
| Subtransmission Circuits—13,800 to 34,500 volt . . . . .                             | 1,037 miles   | 1,235 miles   | 1,283 miles   | 24%  |
| Distribution Circuits—120 to 4,800 volt . . . . .                                    | 6,940 miles   | 9,166 miles   | 9,443 miles   | 36%  |
| Transformer Capacity—Distributing and Industrial Stations—Kilovolt-Amperes . . . . . | 1,217,977     | 2,229,843     | 2,431,918     | 100% |
| Number of Distributing Stations . . . . .  | 88            | 107           | 109           | 24%  |
| Number of Industrial Stations . . . . .  | 257           | 507           | 543           | 111% |
| Power Poles in Use . . . . .   | 192,751       | 255,300       | 262,574       | 36%  |

### FINANCIAL

|   |               |               |               |       |
|---|---------------|---------------|---------------|-------|
| Assets (less provisions for depreciation) . . . . . | \$246,821,209 | \$513,587,470 | \$544,697,011 | 121%  |
| Funded Debt . . . . .                               | 100,963,815   | 241,911,430   | 265,302,970   | 163%  |
| Total Income . . . . .                              | 46,059,152    | 80,917,466    | 88,137,751    | 91%   |
| Net Income . . . . .                                | 13,863,826    | 12,890,451    | 8,617,470     | (38%) |

\*Normal water conditions—Maximum permissible 2-hour loading.

Statistical reports for the 10 years ending June 30, 1957, including tables and charts, may be obtained upon request to the Department of Water and Power.



Modern facilities give better and more convenient service to water and electric customers, in the newly completed San Fernando Valley District Commercial Office and Electric Home Service Center. The building is an attractive addition to the business structures of the Valley.



## MODERN NEW STRUCTURES FOR BETTER SERVICE TO CUSTOMERS

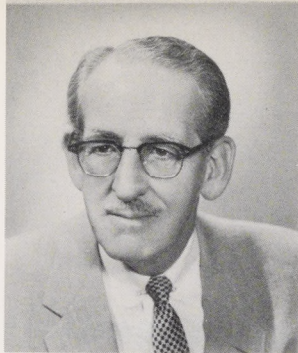
San Pedro Pumping Plant, a new installation to supply more water for the rapidly expanding San Pedro district of Los Angeles, is of modern design, landscaped and illuminated at night as an attractive community feature.



One of the growing number of new power distributing stations recently completed is modern in design and attractively landscaped, combining utility and appearance to gain acceptance as a welcome community asset by the people of the area it serves.







FRANK TWOHY  
Controller

## FINANCES

The fundamental financial policy of the Department of Water and Power of utilizing current revenues to pay all costs of operation, and part of the costs of new and expanded water and electric facilities required to keep pace with Los Angeles' phenomenal growth, was continued during the 1956-57 fiscal year. The remaining cost of new construction was financed through issuance of revenue bonds, to be retired from future revenues. No financial obligation, burden or restriction was placed on the taxpayers of the city.

As in prior years, all revenues received by the Department were placed in separate revenue funds pertaining to the water works and electric works, respectively, as required by the City Charter. Independent certified public accountants' examine balance sheets and related statements of income annually. Copies of their reports are available upon request.

For the fiscal year 1956-57, gross income of both systems was up from the preceding year. In the case of the Power System, part of this increase is attributable to a rate increase of approximately 5.9%, effective December 1, 1956, the first rate increase in 36 years of operation of the Power System by the city. During those 36 years, twelve separate rate reduc-

tions had been made aggregating 38%. In both systems, however, increased revenues were more than offset by higher costs of operation.

From the net income of \$5,608,529 of the Water System, \$1,445,326 was paid into the city's general fund. From the net income of \$8,617,470 of the Power System, \$3,607,000 was paid into the city's reserve fund. The entire remainder of the net income in each system was required for investment in the system by the retirement of bonds and payment for part of the cost of construction work. Under the necessarily large-scale construction program, expenditures for additions and extensions totaled \$17,483,126 in the Water System and \$39,268,170 in the Power System. Funds for this purpose were provided from current revenues and from the sale of \$9 million of water works revenue bonds and \$37 million of electric plant revenue bonds, the latter including \$4 million of 90-day notes.

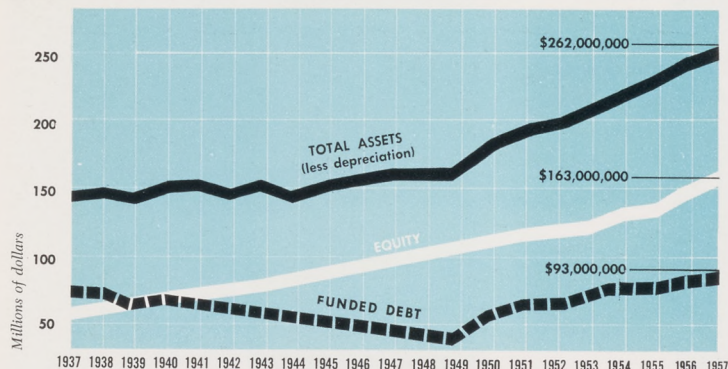
At the end of the 1956-57 fiscal year, the Water System plant and equipment account was \$246,325,110 after deducting \$88,005,043 accumulated provisions for depreciation. Water bonds outstanding amounted to \$93,211,000, of which approximately 25% were general obligation bonds at an average annual interest cost of 4.09%, and approximately 75% were revenue bonds at an average annual interest cost of 2.55%. The \$9 million water works revenue bond issue of 30-year equal annual maturity serial bonds was sold in February, 1957, at an average annual interest cost of 3.13%.

The Power System plant and equipment account was \$493,643,038 after deducting accumulated provisions for depreciation of \$116,217,122. Power bonds outstanding amounted to \$264,515,000, of which approximately 3% were general obligation bonds at an average annual interest cost of 3.76%, and approximately 97% were revenue bonds at an average annual interest cost of 2.51%. The long-term obligation of the Power System to the Water System was \$787,970. Three issues of 30-year equal annual maturity electric plant revenue bonds were sold during the year: A \$4,500,000 issue, sold in August, 1956, at an average annual interest cost of 2.88%; a \$13,500,000 issue in November, 1956, at an average annual interest cost of 3.38%; and a \$15,000,000 issue in June, 1957, at an average annual interest cost of 3.88%.

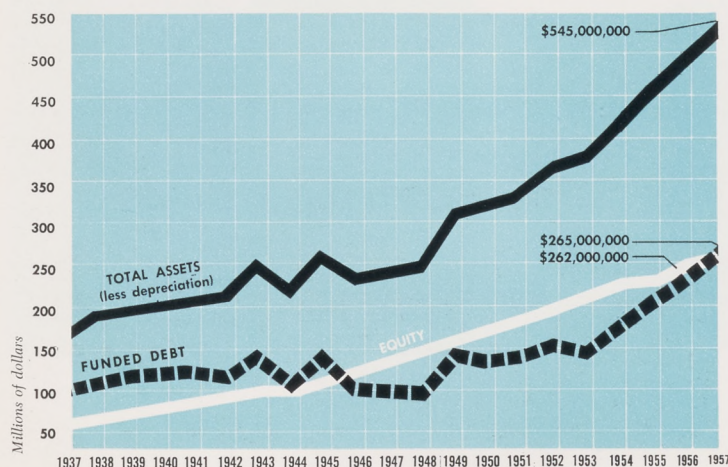
During the 1956-57 fiscal year, under long range plans for the use of electronic data processing equipment, a moderate-sized magnetic drum electronic computer was placed in service for the processing of payrolls, labor distributions, and equipment and other cost reports. During the 1957-58 fiscal year, valuable experience is expected to be gained on the best method of using electronic devices in customer billing and accounting functions.

Illustrating the volume of accounting transactions required, the Department issued 358,785 paychecks, dispatched 91,782 payments for materials and other services, made 8,957,650 regular meter readings, and rendered 6,204,073 bills for water or electric service. Twenty-three district and branch commercial offices and seven self-service depositories were maintained.

### WATER SYSTEM



### POWER SYSTEM

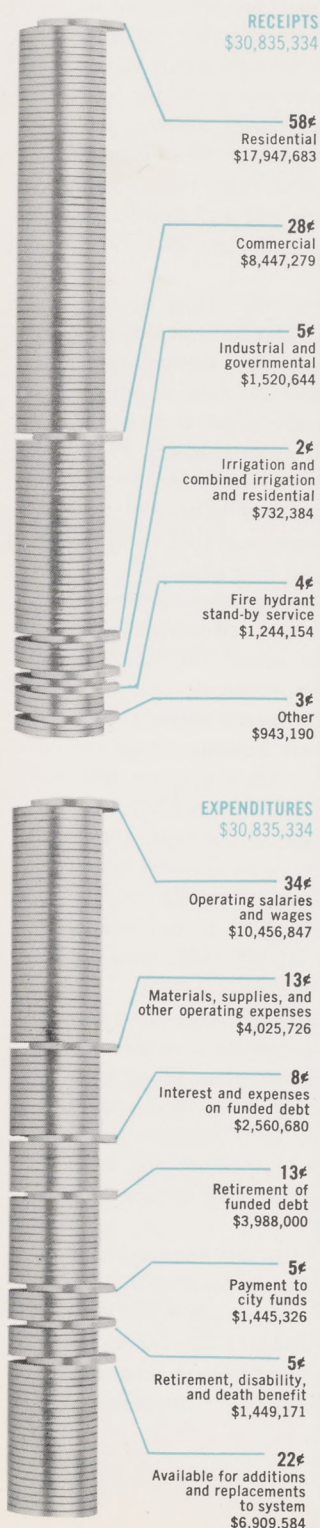




# WATER SYSTEM

## COMPARATIVE STATEMENTS OF INCOME AND INCOME RETAINED FOR USE IN THE BUSINESS

The 1956-57 Water Dollar



### Operating revenue:

#### Sales of water—

|                                     |  |
|-------------------------------------|--|
| Residential . . . . .               |  |
| Commercial and industrial . . . . . |  |
| Other . . . . .                     |  |

|                                   |  |
|-----------------------------------|--|
| Fire hydrant rentals . . . . .    |  |
| Other operating revenue . . . . . |  |
| Total operating revenue . . . . . |  |

### Operating expense:

#### Source of supply—

|   |  |
|---|--|
| Dams, reservoirs and aqueduct . . . . .       |  |
| Purchased water . . . . .                     |  |
| Pumping . . . . .                             |  |
| Purification . . . . .                        |  |
| Distribution . . . . .                        |  |
| Customers accounting and collecting . . . . . |  |
| General . . . . .                             |  |

Contribution to the employees' retirement plan funds (not including \$499,977 and \$494,224 charged to plant construction in the respective years) . . . . .

|  |  |
|--|--|
| Total operation . . . . .                    |  |
| Maintenance . . . . .                        |  |
| Provision for depreciation . . . . .         |  |
| Taxes on property outside the City . . . . . |  |
| Total operating expense . . . . .            |  |
| Operating income . . . . .                   |  |

### Other income—net

Income before funded debt expense . . . . .

### Funded debt expense:

|   |  |
|---|--|
| Interest . . . . .                                |  |
| Amortization of bond expenses . . . . .           |  |
| Interest charged to construction—credit . . . . . |  |

Net income for the year . . . . .

Income retained for use in the business at beginning of year . . . . .

Income retained for use in the business at end of year . . . . .

Year ending June 30  
1957                      1956

|  |               |               |
|--|---------------|---------------|
|  |               |               |
|  | \$ 17,947,683 | \$ 16,876,246 |
|  | 8,713,561     | 8,342,284     |
|  | 1,986,746     | 1,907,232     |
|  | \$ 28,647,990 | \$ 27,125,762 |
|  | 1,244,154     | 1,200,366     |
|  | 295,674       | 298,965       |
|  | \$ 30,187,818 | \$ 28,625,093 |
|  |               |               |
|  | \$ 489,187    | \$ 445,571    |
|  | 667,572       | 650,567       |
|  | 1,084,689     | 927,003       |
|  | 772,134       | 754,592       |
|  | 2,089,717     | 1,916,863     |
|  | 1,794,691     | 1,651,237     |
|  | 2,465,403     | 2,216,537     |
|  |               |               |
|  | 1,270,555     | 1,217,010     |
|  | \$ 10,633,948 | \$ 9,779,380  |
|  | 5,297,796     | 4,705,337     |
|  | 6,082,939     | 5,667,787     |
|  | 651,442       | 647,568       |
|  | \$ 22,666,125 | \$ 20,800,072 |
|  | \$ 7,521,693  | \$ 7,825,021  |
|  | 647,516       | 359,986       |
|  | \$ 8,169,209  | \$ 8,185,007  |
|  |               |               |
|  | \$ 2,634,021  | \$ 2,428,634  |
|  | 6,659         | 7,773         |
|  | (80,000)      | (82,000)      |
|  | \$ 2,560,680  | \$ 2,354,407  |
|  | \$ 5,608,529  | \$ 5,830,600  |
|  |               |               |
|  | 97,735,801    | 91,905,201    |
|  | \$103,344,330 | \$ 97,735,801 |



# POWER SYSTEM

## COMPARATIVE STATEMENTS OF INCOME AND INCOME RETAINED FOR USE IN THE BUSINESS

|   | Year ending June 30  |                      |
|---|----------------------|----------------------|
|   | 1957                 | 1956                 |
| <b>Operating revenue:</b>   |                      |                      |
| Sales of electric energy—   |                      |                      |
| Residential . . . . .   | \$ 33,685,321        | \$ 30,341,237        |
| Commercial and industrial . . . . .   | 49,007,665           | 44,914,406           |
| Other . . . . .   | 3,746,682            | 3,421,716            |
|   | <u>\$ 86,439,668</u> | <u>\$ 78,677,359</u> |
| Other operating revenue . . . . .   | 1,350,444            | 736,245              |
| Total operating revenue . . . . .   | <u>\$ 87,790,112</u> | <u>\$ 79,413,604</u> |
| <b>Operating expense:</b>   |                      |                      |
| Production—   |                      |                      |
| Steam electric generation—  |                      |                      |
| Fuel . . . . .  | \$ 20,780,877        | \$ 15,923,424        |
| Other . . . . .   | 2,242,897            | 2,118,788            |
| Hydroelectric generation . . . . .  | 494,691              | 483,590              |
| Purchased energy, from Hoover power plant and other sources . . . . .   | 3,576,060            | 2,632,205            |
| Transmission . . . . .  | 814,946              | 761,530              |
| Distribution . . . . .  | 10,597,274           | 9,864,879            |
| Customers accounting and collecting . . . . .   | 3,111,836            | 2,871,439            |
| Sales promotion . . . . .   | 1,765,263            | 1,654,320            |
| General . . . . .   | 4,387,227            | 3,795,922            |
| Contributions to the employees' retirement plan funds (not including \$1,248,008 and \$1,369,754 charged to plant construction in the respective years) . . . . . | 2,631,022            | 2,519,910            |
| Total operation . . . . .   | <u>\$ 50,402,093</u> | <u>\$ 42,626,007</u> |
| Maintenance . . . . .   | 9,202,193            | 7,809,338            |
| Provision for depreciation . . . . .  | 13,179,991           | 11,976,980           |
| Taxes on property outside the City . . . . .  | 775,807              | 675,255              |
| Total operating expense . . . . .   | <u>\$ 73,560,084</u> | <u>\$ 63,087,580</u> |
| Operating income . . . . .  | <u>\$ 14,230,028</u> | <u>\$ 16,326,024</u> |
| <b>Other income—net</b>   | <u>347,639</u>       | <u>1,503,862</u>     |
| Income before funded debt expense . . . . .   | <u>\$ 14,577,667</u> | <u>\$ 17,829,886</u> |
| <b>Funded debt expense:</b>   |                      |                      |
| Interest . . . . .  | \$ 5,918,110         | \$ 5,181,534         |
| Amortization of bond premiums and expenses . . . . .  | 314,087              | 328,901              |
| Interest charged to construction—credit . . . . .   | (272,000)            | (571,000)            |
|   | <u>\$ 5,960,197</u>  | <u>\$ 4,939,435</u>  |
| Net income for the year . . . . .   | <u>\$ 8,617,470</u>  | <u>\$ 12,890,451</u> |
| <b>Income retained for use in the business at beginning of year</b>   | <u>250,224,247</u>   | <u>240,765,796</u>   |
|   | <u>\$258,841,717</u> | <u>\$253,656,247</u> |
| Less—Payments to the reserve fund of the City . . . . .   | 3,607,000            | 3,432,000            |
| <b>Income retained for use in the business at end of year</b>   | <u>\$255,234,717</u> | <u>\$250,224,247</u> |

### The 1956-57 Power Dollar

#### RECEIPTS \$88,137,751

38¢ Residential  
\$33,685,321

33¢ Commercial lighting  
\$29,373,007

9¢ Commercial power  
\$7,737,649

14¢ Industrial  
\$11,897,009

3¢ Street lighting  
\$2,980,358

3¢ Other  
\$2,464,407

#### EXPENDITURES \$88,137,751

31¢ Operating salaries and wages  
\$27,039,389

6¢ Materials, supplies, and other operating expenses  
\$5,125,391

4¢ Purchased energy  
\$3,576,060

24¢ Fuel  
\$20,780,877

7¢ Interest and expenses on funded debt  
\$5,960,197

11¢ Retirement of funded debt  
\$9,608,460

4¢ Payment to city funds  
\$3,607,000

3¢ Retirement, disability, and death benefit  
\$3,082,569

10¢ Available for additions and replacements to system  
\$9,357,808





## WATER SYSTEM

### Assets

1957 June 30 1956

#### UTILITY PLANT, at original cost:

|  |               |               |
|--|---------------|---------------|
| Plant in service, excluding lands . . . . .            | \$292,843,308 | \$275,110,729 |
| Less—Accumulated provisions for depreciation . . . . . | 88,005,043    | 82,882,472    |
|  | <hr/>         | <hr/>         |
| Lands . . . . .  | \$204,838,265 | \$192,228,257 |
| Construction work in progress . . . . .                | 38,877,082    | 38,515,386    |
|  | 2,609,763     | 4,141,867     |
|  | <hr/>         | <hr/>         |
|  | \$246,325,110 | \$234,885,510 |

#### CONSTRUCTION FUNDS:

|  |             |             |
|--|-------------|-------------|
| Cash, deposited with City Treasurer . . . . .                                  | \$ 189,150  | \$ 27,497   |
| United States Treasury bills, at cost, deposited with City Treasurer . . . . . | 3,965,920   | 3,972,600   |
| Amount payable to revenue fund (see below) . . . . .                           | (4,155,070) | (4,000,097) |
|  | <hr/>       | <hr/>       |
|  | \$ —        | \$ —        |

**LONG TERM RECEIVABLE**, from Power System of the Department—due in equal monthly instalments to October 1974 plus interest at 4½% . . .

|            |            |
|------------|------------|
| \$ 787,970 | \$ 833,430 |
|------------|------------|

**BOND REDEMPTION AND INTEREST FUNDS**, deposited with City Treasurer

|            |            |
|------------|------------|
| \$ 477,933 | \$ 524,310 |
|------------|------------|

#### CURRENT AND WORKING ASSETS:

|   |               |               |
|---|---------------|---------------|
| Cash, deposited with City Treasurer . . . . .   | \$ 1,984,770  | \$ 533,077    |
| Amount receivable from construction funds (see above) . . . . .                               | 4,155,070     | 4,000,097     |
| Cash on hand and revolving funds . . . . .  | 375,020       | 265,360       |
| Customers and miscellaneous accounts receivable, less allowance for losses . . . . .          | 3,056,087     | 2,732,058     |
| Construction, operation and maintenance materials and supplies, at approximate cost . . . . . | 4,099,520     | 4,571,115     |
|   | <hr/>         | <hr/>         |
|   | \$ 13,670,467 | \$ 12,101,707 |

#### DEFERRED CHARGES:

|   |               |               |
|---|---------------|---------------|
| Preliminary survey and investigation expenditures . . . . . | \$ 509,120    | \$ 775,397    |
| Deferred stores, shop and miscellaneous expenses . . . . .  | 338,783       | 401,309       |
| Unamortized bond issue expenses . . . . .                   | 90,072        | 82,130        |
|   | <hr/>         | <hr/>         |
|   | \$ 937,975    | \$ 1,258,836  |
|   | <hr/>         | <hr/>         |
|   | \$262,199,455 | \$249,603,793 |



# COMPARATIVE BALANCE SHEETS

## Liabilities

1957 June 30 1956

### FUNDED DEBT:

|                                    |                      |                      |
|------------------------------------|----------------------|----------------------|
| General obligation bonds . . . . . | \$ 22,996,000        | \$ 24,804,000        |
| Revenue bonds . . . . .            | 70,215,000           | 63,395,000           |
|                                    | <u>\$ 93,211,000</u> | <u>\$ 88,199,000</u> |

Note—Funded debt at June 30, 1957, included \$4,269,000 regular maturities occurring in the succeeding fiscal year and \$17,000 matured but not presented for payment.

### OTHER CURRENT LIABILITIES:

|   |                     |                     |
|---|---------------------|---------------------|
| Accrued interest on bonds, including at June 30, 1957, \$49,513 matured coupons not presented for payment . . . . . | \$ 766,945          | \$ 712,991          |
| Accounts payable and accrued payrolls . . . . .   | 2,378,707           | 2,731,601           |
| Customers' deposits . . . . .   | 3,012,175           | 2,618,819           |
|   | <u>\$ 6,157,827</u> | <u>\$ 6,063,411</u> |

|  |              |              |
|--|--------------|--------------|
| INVESTMENT FROM PROCEEDS OF GENERAL TAXATION . . . . . | \$ 4,295,960 | \$ 5,741,286 |
|--|--------------|--------------|

|  |               |               |
|--|---------------|---------------|
| CONTRIBUTIONS IN AID OF CONSTRUCTION . . . . . | \$ 55,190,338 | \$ 51,864,295 |
|--|---------------|---------------|

|   |               |               |
|---|---------------|---------------|
| INCOME RETAINED FOR USE IN THE BUSINESS . . . . . | \$103,344,330 | \$ 97,735,801 |
|---|---------------|---------------|

### PURCHASE COMMITMENTS, for construction contracts and materials, etc.:

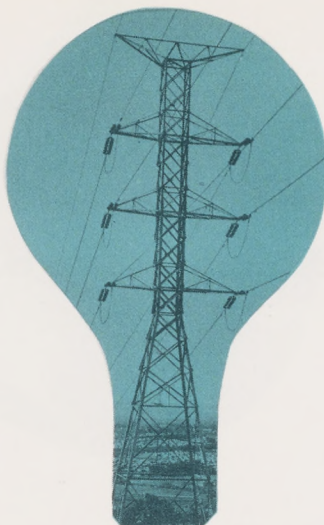
|                            |                  |
|----------------------------|------------------|
| At June 30, 1957 . . . . . | \$ 3,712,000     |
| At June 30, 1956 . . . . . | <u>1,692,000</u> |

### CONTINGENT LIABILITIES:

Claims and suits arising out of the ownership and operation of the Water System for an aggregate of approximately \$2,700,000 were pending against the Department at June 30, 1957, for damages to persons and property and for other alleged liabilities arising out of matters usually incident to the conduct of such a utility business. Until the pending claims and suits are disposed of, the Department's liability, if any, in these matters cannot be determined and no provision therefor has been made in the accompanying financial statements.

|                      |                      |
|----------------------|----------------------|
| <u>\$262,199,455</u> | <u>\$249,603,793</u> |
|----------------------|----------------------|





## POWER SYSTEM

### Assets

|  | 1957                 | June 30 | 1956                 |
|--|----------------------|---------|----------------------|
| <b>UTILITY PLANT, at original cost:</b>  |                      |         |                      |
| Plant in service, excluding lands . . . . .  | \$567,506,491        |         | \$535,209,706        |
| Less—Accumulated provisions for depreciation . . . . .                               | 116,217,122          |         | 107,114,886          |
|  | <u>\$451,289,369</u> |         | <u>\$428,094,820</u> |
| Lands . . . . .  | 27,151,818           |         | 24,893,325           |
| Construction work in progress . . . . .  | 15,201,851           |         | 13,859,117           |
|  | <u>\$493,643,038</u> |         | <u>\$466,847,262</u> |
| <b>CONSTRUCTION FUNDS:</b>   |                      |         |                      |
| Cash, deposited with City Treasurer . . . . .  | \$ 27,853            |         | \$ 48,979            |
| United States Treasury bills, at cost, deposited with City Treasurer . . . . .       | 8,922,600            |         | 7,948,400            |
| Amount payable to revenue fund (see below) . . . . .                                 | (8,950,453)          |         | (7,997,379)          |
|  | <u>\$ —</u>          |         | <u>\$ —</u>          |
| <b>BOND REDEMPTION AND INTEREST FUNDS, deposited with City Treasurer</b>             | <u>\$ 577,349</u>    |         | <u>\$ 570,346</u>    |
| <b>CURRENT AND WORKING ASSETS:</b>   |                      |         |                      |
| Cash, deposited with City Treasurer . . . . .  | \$ 5,518,039         |         | \$ 3,315,210         |
| Amount receivable from construction funds (see above) . . . . .                      | 8,950,453            |         | 7,997,379            |
| Cash on hand and revolving funds . . . . .   | 174,870              |         | 473,983              |
| Customers and miscellaneous accounts receivable, less allowance for losses . . . . . | 8,244,294            |         | 7,497,658            |
| Materials and supplies, at approximate cost—   |                      |         |                      |
| Construction, operation and maintenance . . . . .                                    | 15,336,149           |         | 12,284,636           |
| Fuel for generation . . . . .  | 4,486,564            |         | 5,749,379            |
|  | <u>\$ 42,710,369</u> |         | <u>\$ 37,318,245</u> |
| <b>DEFERRED CHARGES:</b>   |                      |         |                      |
| Unamortized bond redemption premiums and bond issue expenses . . . . .               | \$ 3,223,568         |         | \$ 3,496,921         |
| Advance payment of generating charges for Hoover power plant . . . . .               | 2,312,604            |         | 2,745,725            |
| Preliminary survey and investigation expenditures . . . . .                          | 441,860              |         | 959,466              |
| Deferred stores, shop and miscellaneous expenses . . . . .                           | 1,788,223            |         | 1,649,505            |
|  | <u>\$ 7,766,255</u>  |         | <u>\$ 8,851,617</u>  |
|  | <u>\$544,697,011</u> |         | <u>\$513,587,470</u> |



# COMPARATIVE BALANCE SHEETS

## Liabilities

|  | 1957                 | June 30 | 1956                 |
|--|----------------------|---------|----------------------|
| <b>FUNDED DEBT:</b>  |                      |         |                      |
| General obligation bonds . . . . .   | \$ 9,069,000         |         | \$ 10,118,000        |
| Revenue bonds . . . . .  | 255,446,000          |         | 230,960,000          |
| Long term obligation to Water System of the Department . . . . .   | 787,970              |         | 833,430              |
|  | <u>\$265,302,970</u> |         | <u>\$241,911,430</u> |
| <br>Note—Funded debt at June 30, 1957, included \$10,787,460 regular maturities occurring in the succeeding fiscal year and \$14,000 matured but not presented for payment.  |                      |         |                      |
| <b>OTHER CURRENT LIABILITIES:</b>  |                      |         |                      |
| Accrued interest on bonds, including at June 30, 1957, \$100,850 matured coupons not presented for payment . . . . .   | \$ 1,677,319         |         | \$ 1,563,845         |
| Accounts payable and accrued payrolls . . . . .  | 9,996,292            |         | 8,648,924            |
| Extension and other deposits . . . . .   | 1,811,819            |         | 1,437,392            |
|  | <u>\$ 13,485,430</u> |         | <u>\$ 11,650,161</u> |
| <br><b>DEFERRED INCOME</b> , received from cities of Burbank, Glendale and Pasadena for rentals of transmission and other facilities, applicable to future periods   | <u>\$ 3,564,610</u>  |         | <u>\$ 3,615,760</u>  |
| <br><b>CONTRIBUTIONS IN AID OF CONSTRUCTION</b> . . . . .  | <u>\$ 7,109,284</u>  |         | <u>\$ 6,185,872</u>  |
| <br><b>INCOME RETAINED FOR USE IN THE BUSINESS</b> . . . . .   | <u>\$255,234,717</u> |         | <u>\$250,224,247</u> |
| <br><b>PURCHASE COMMITMENTS</b> , for construction contracts and materials, etc.:<br>At June 30, 1957 . . . . . \$45,509,000<br>At June 30, 1956 . . . . . <u>26,572,000</u>   |                      |         |                      |
| <br><b>CONTINGENT LIABILITIES:</b><br>Claims and suits arising out of the ownership and operation of the Power System for an aggregate of approximately \$2,200,000 were pending against the Department at June 30, 1957, for damages to persons and property and for other alleged liabilities arising out of matters usually incident to the conduct of such a utility business. Until the pending claims and suits are disposed of, the Department's liability, if any, in these matters cannot be determined and no provision therefor has been made in the accompanying financial statements. |                      |         |                      |
|  | <u>\$544,697,011</u> |         | <u>\$513,587,470</u> |



# WATER



*Statistics Relating to Water Sales*

**Sales 1956-57**

## Revenue:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Units of 100 cubic feet sold:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Average billing price per 100 cubic feet:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Average number of customers (calculated on number of billings):

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Average annual consumption per customer (in units of 100 cubic feet):

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase . . . . .

Per cent increase . . . . .

# POWER



*Statistics Relating to  
Sales of Electric Energy*

## Revenue:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Kilowatt hours sold:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase (decrease) . . . . .

Per cent increase (decrease) . . . . .

## Average billing price per kilowatt hour:

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase . . . . .

Per cent increase . . . . .

## Average number of customers (calculated on number of billings):

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase . . . . .

Per cent increase . . . . .

## Average annual consumption per customer (in kilowatt hours):

Years ending June 30—

1957 . . . . .

1956 . . . . .

Increase . . . . .

Per cent increase . . . . .

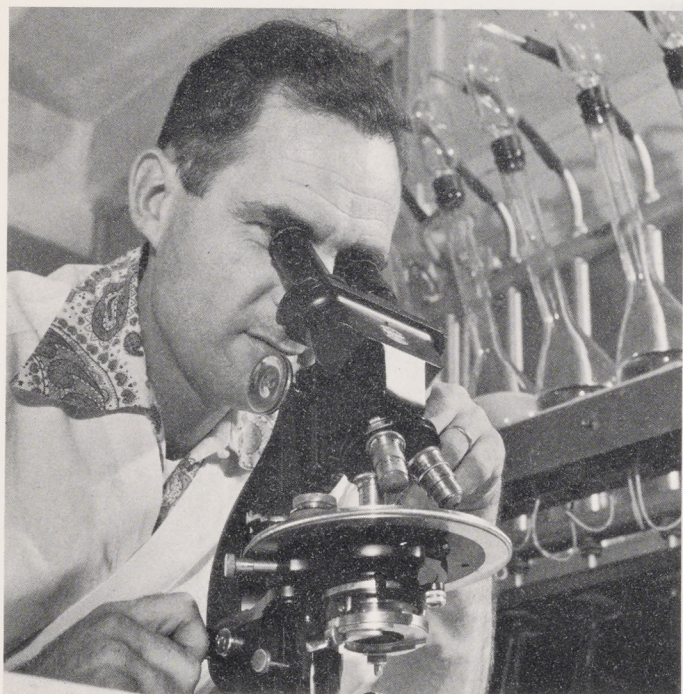


| Residential                | Commercial               | Industrial             | Governmental             | Intermittent<br>Irrigation | Combined<br>Irrigation<br>and<br>Residential | All<br>Classes<br>Combined |
|----------------------------|--------------------------|------------------------|--------------------------|----------------------------|--|----------------------------|
| \$17,947,683<br>16,876,246 | \$8,447,279<br>8,069,470 | \$266,282<br>272,814   | \$1,254,362<br>1,105,750 | \$318,161<br>345,186       | \$414,223<br>456,296                         | \$28,647,990<br>27,125,762 |
| \$ 1,071,437<br>6.35       | \$ 377,809<br>4.68       | \$ (6,532)<br>(2.39)   | \$ 148,612<br>13.44      | \$ (27,025)<br>(7.83)      | \$ (42,073)<br>(9.22)                        | \$ 1,522,228<br>5.61       |
| 95,956,131<br>89,682,304   | 58,401,786<br>55,653,296 | 2,522,189<br>2,534,940 | 12,488,629<br>10,718,852 | 12,780,217<br>13,754,422   | 3,427,752<br>3,705,889                       | 185,576,704<br>176,049,703 |
| 6,273,827<br>7.00          | 2,748,490<br>4.94        | (12,751)<br>(.50)      | 1,769,777<br>16.51       | (974,205)<br>(7.08)        | (278,137)<br>(7.51)                          | 9,527,001<br>5.41          |
| \$ .1870<br>.1882          | \$ .1446<br>.1450        | \$ .1056<br>.1076      | \$ .1004<br>.1032        | \$ .0249<br>.0251          | \$ .1208<br>.1231                            | \$ .1544<br>.1541          |
| \$ (.0012)<br>(.64)        | \$ (.0004)<br>(.28)      | \$ (.0020)<br>(1.86)   | \$ (.0028)<br>(2.71)     | \$ (.0002)<br>(.80)        | \$ (.0023)<br>(1.87)                         | \$ .0003<br>.19            |
| 461,457<br>448,800         | 65,907<br>63,933         | 130<br>142             | 3,029<br>2,922           | 891<br>1,000               | 5,374<br>6,132                               | 536,788<br>522,929         |
| 12,657<br>2.82             | 1,974<br>3.09            | (12)<br>(8.45)         | 107<br>3.66              | (109)<br>(10.90)           | (758)<br>(12.36)                             | 13,859<br>2.65             |
| 208<br>200                 | 886<br>870               | 19,401<br>17,852       | 4,123<br>3,668           | 14,344<br>13,754           | 638<br>604                                   |                            |
| 8<br>4.00                  | 16<br>1.84               | 1,549<br>8.68          | 455<br>12.40             | 590<br>4.29                | 34<br>5.63                                   |                            |

feet):

| Residential                    | Commercial                     | Industrial                     | Public Street<br>and<br>Highway<br>Lighting | Department's<br>Water<br>System | Total<br>Except Other<br>Electric<br>Utilities | Other<br>Electric<br>Utilities | All<br>Classes<br>Combined     |
|--------------------------------|--------------------------------|--------------------------------|---|---------------------------------|--|--------------------------------|--------------------------------|
| \$33,685,321<br>30,341,237     | \$37,110,656<br>34,354,005     | \$11,897,009<br>10,560,401     | \$2,980,358<br>2,657,235                    | \$603,099<br>518,740            | \$86,276,443<br>78,431,618                     | \$163,225<br>245,741           | \$86,439,668<br>78,677,359     |
| \$ 3,344,084<br>11.02          | \$ 2,756,651<br>8.02           | \$ 1,336,608<br>12.66          | \$ 323,123<br>12.16                         | \$ 84,359<br>16.26              | \$ 7,844,825<br>10.00                          | \$ (82,516)<br>(33.58)         | \$ 7,762,309<br>9.87           |
| 1,558,253,614<br>1,465,430,676 | 2,520,942,829<br>2,337,488,746 | 1,491,185,302<br>1,393,696,123 | 127,811,562<br>121,038,250                  | 78,684,214<br>68,358,224        | 5,776,877,521<br>5,386,012,019                 | 2,887,654<br>13,400,344        | 5,779,765,175<br>5,399,412,363 |
| 92,822,938<br>6.33             | 183,454,083<br>7.85            | 97,489,179<br>7.00             | 6,773,312<br>5.60                           | 10,325,990<br>15.11             | 390,865,502<br>7.26                            | (10,512,690)<br>(78.45)        | 380,352,812<br>7.04            |
| \$ .0216<br>.0207              | \$ .0147<br>.0147              | \$ .0080<br>.0076              | \$ .0233<br>.0220                           | \$ .0077<br>.0076               | \$ .0149<br>.0146                              | \$ .0565<br>.0183              | \$ .0150<br>.0146              |
| \$ .0009<br>4.35               | \$ —<br>—                      | \$ .0004<br>5.26               | \$ .0013<br>5.91                            | \$ .0001<br>1.32                | \$ .0003<br>2.05                               | \$ .0382<br>208.74             | \$ .0004<br>2.74               |
| 719,302<br>693,286             | 127,482<br>124,850             | 9,088<br>8,938                 | 1,786<br>1,671                              | 321<br>311                      | 857,979<br>829,056                             | 2<br>2                         | 857,981<br>829,058             |
| 26,016<br>3.75                 | 2,632<br>2.11                  | 150<br>1.68                    | 115<br>6.88                                 | 10<br>3.22                      | 28,923<br>3.49                                 | —<br>—                         | 28,923<br>3.49                 |
| 2,166<br>2,114                 | 19,775<br>18,722               | 164,083<br>155,929             |   |                                 |  |                                |                                |
| 52<br>2.46                     | 1,053<br>5.62                  | 8,154<br>5.23                  |   |                                 |  |                                |                                |



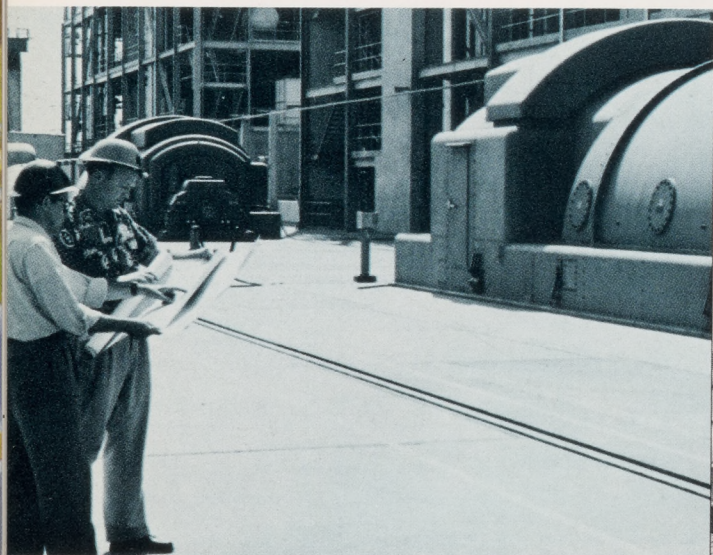


High quality of the city's water supply is maintained by constant vigilance of Sanitary Engineering personnel, one of whom is pictured making a test of a water sample.

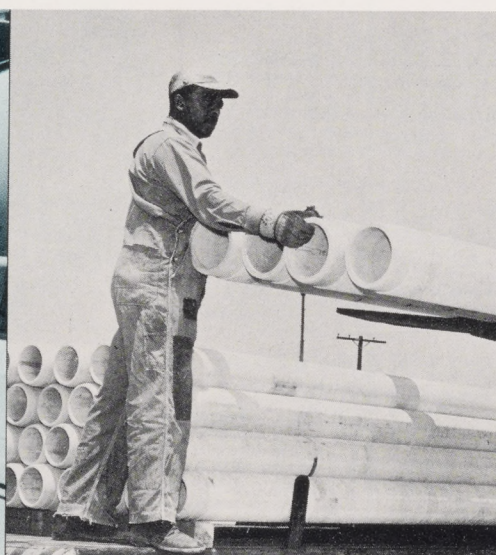
## DEPARTMENT PEOPLE

Through the advanced skills and abilities of Department of Water and Power people, the many complex tasks necessary to supply Los Angeles' ever-growing water and electric requirements are carried out successfully, and reliable utility services at low cost are provided to the Department's customers. Approximately 11,000 men and women employees kept these services operating smoothly during the 1956-57 fiscal year.

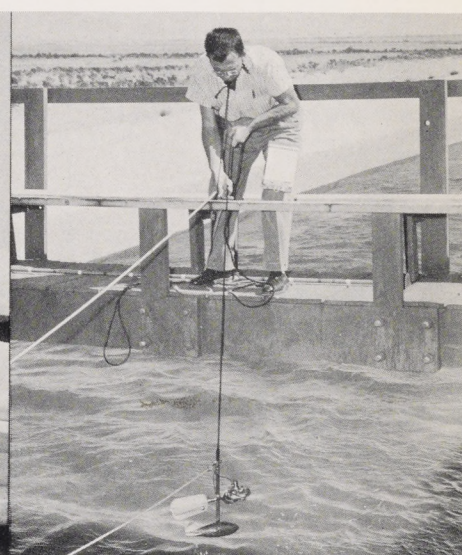
Their work was performed in a career-service environment which encourages the development of excellent teamwork and performance according to the best traditions of the public service. Career principles of promotion are firmly established within the Department, and vacancies in higher positions as they occurred during the year were consistently filled on the basis of demonstrated merit. In-service training and assistance to employees in obtaining further education continued to improve their working skills and to prepare them for advancement. Encouragement was given to Department people to submit their ideas for improvement in operations and service through awards provided under a suggestion plan system. Safety awards gave recognition to advancing standards of safety and to outstanding records of many units in completing long service records without a disabling injury.



Power System men maintain constant check on operation of power plants to keep electricity flowing to homes, business and industry.

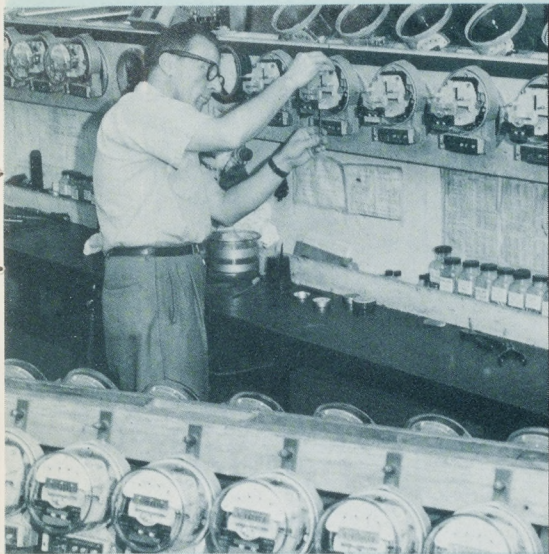


Handling a large amount of water pipe is required by the city's rapid growth. More than 100 miles of water mains are installed in an average year.



Hydrographer checks the velocity of water as it flows down the Los Angeles Owens River Aqueduct from the High Sierra.





Tester makes final check of electric meters before installation on customers' lines.



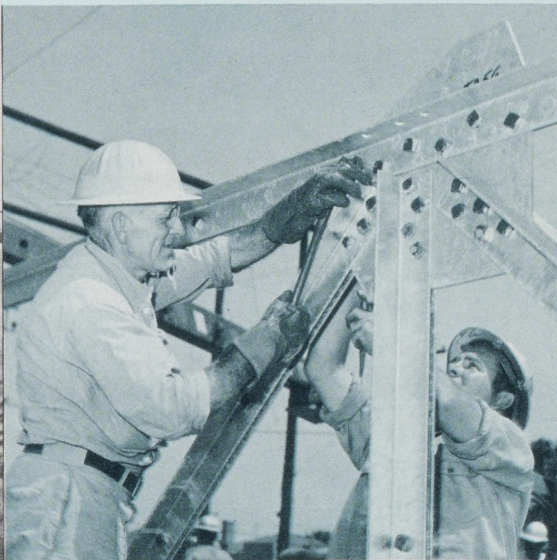
Welder joins two sections of pipe during relocation of the Hollywood Reservoir Inlet Line.



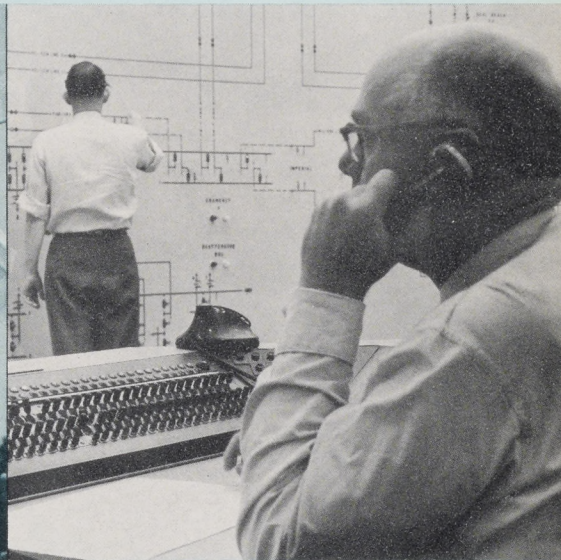
Water and power projects are planned far in advance to meet the city's rapid growth.



Electronic "brain" is latest and most modern machine used by the Department for faster and more economical calculating procedures.



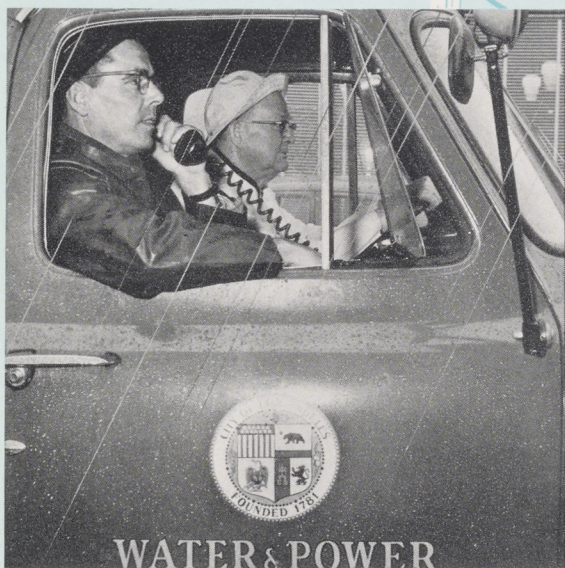
Ground crew bolts together a section of steel transmission tower. The section then is lifted by big cranes and bolted into place on the tower.



Dispatchers at power dispatching headquarters direct the flow of electricity from generating plants into receiving and distributing systems.



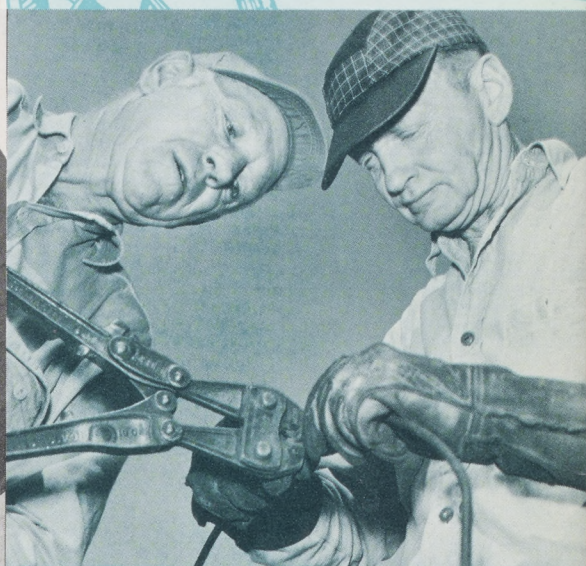
## DEPARTMENT PEOPLE



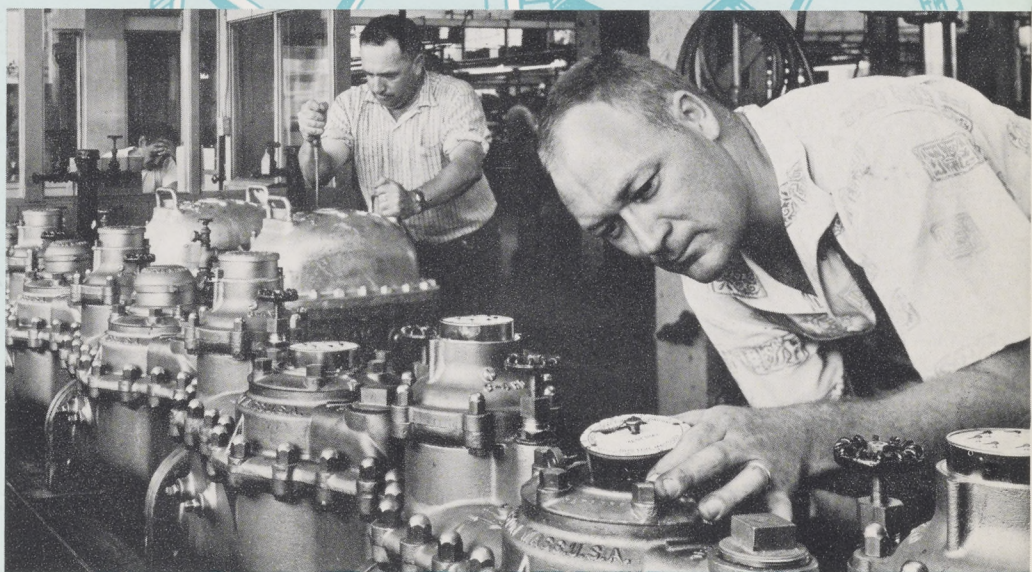
Electric trouble crews are on duty around the clock in all kinds of weather to restore service in an emergency.



Meters are read carefully to determine consumption and assure accurate billing.



Splicing electric lines calls for skill, experience and close teamwork.



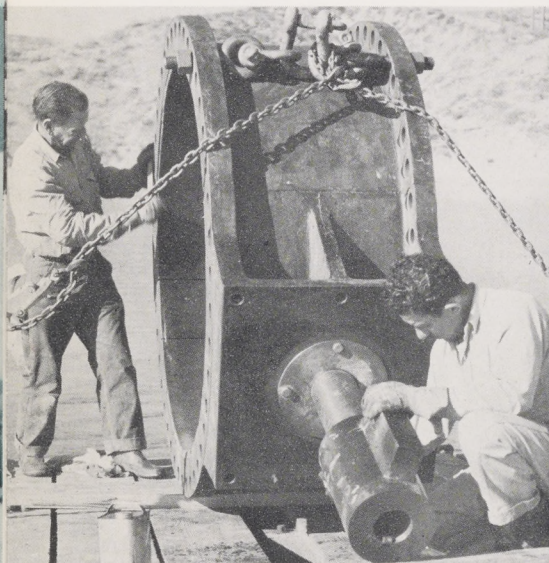
Water meters undergo rigid tests and are carefully inspected before installation. The rapid growth of Los Angeles requires the installation of thousands of new meters every year.



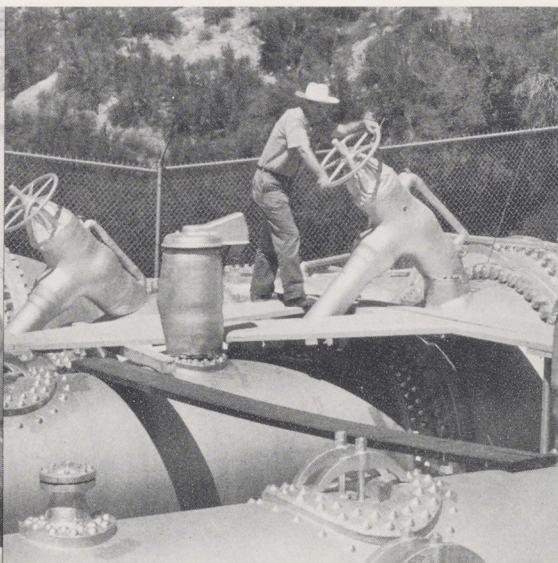
Water and Power men and women are characterized by their long careers of skillful and conscientious service, exemplified by the fact that a total of more than 2,100 employees have served the Department for 20 years or more.

Contributing to their high morale, Department employees participate in a Retirement System providing for retirement, disability and death benefits. At the request of a majority of women employees, an amendment to the Los Angeles City Charter was submitted to the voters and approved during the year, raising the normal retirement age for women from 60 to 62 years. Normal retirement age for men is 65. Employees have available health and life insurance, credit union, and other benefits. Department employees are public-spirited and take part in organized efforts to support charitable, civic and other programs of community service.

These pages illustrate a few of the large variety of jobs performed by Department people in keeping water and electricity flowing to customers day by day throughout the year.



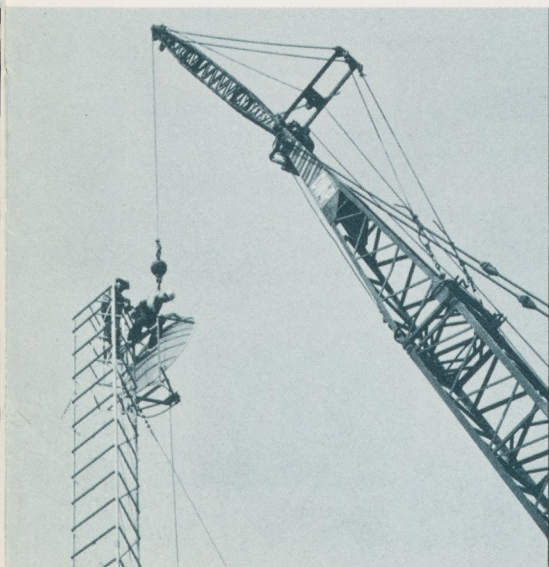
Crew prepares huge valve for installation in a reservoir outlet tower.



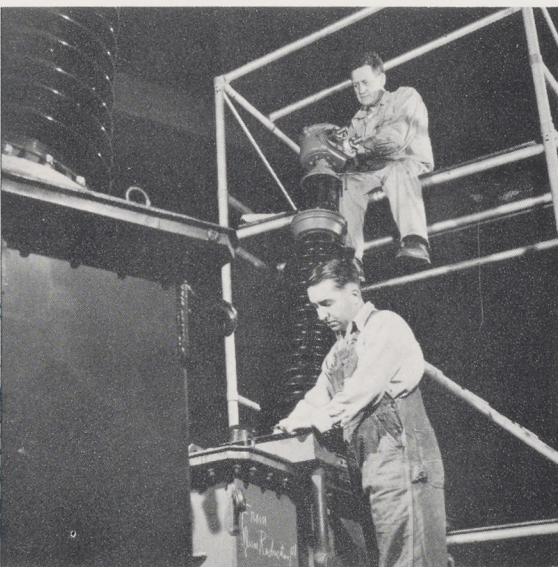
Operator turns manually-operated valve controlling flow of water through large pipeline.



Water and electric customers get prompt, courteous service at district and commercial offices.



Microwave antenna is installed, under a program of enlarging the communications system.



Electrical repairmen recondition large power transformers in Department shops.



Office workers keep accurate figures on far flung operations of the Department.

4471 BR 10251 (1042)



## PUBLIC SERVICES



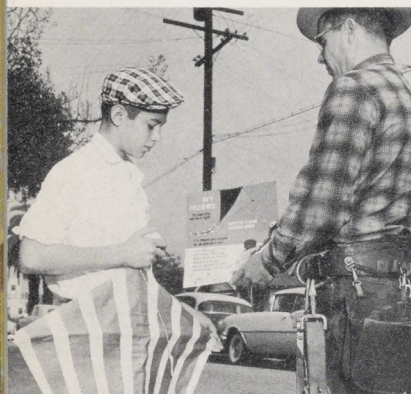
Illuminated displays at the annual Home Show help to demonstrate the advantages of "Living Better Electrically."



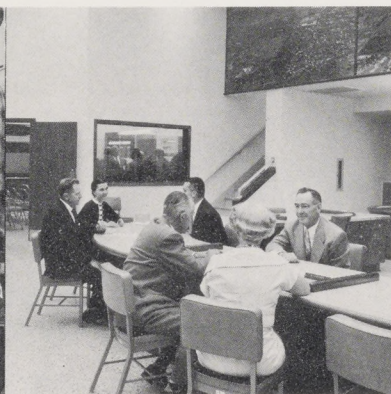
Department exhibits at Sportsmen's Show and other public events consistently attract large crowds



Sound advice and guidance is made available to people planning to build or remodel homes and kitchens.



Youngsters are taught kite flying safety rules in a continuing educational program to prevent injury and reduce damage to electric lines.



Customers are encouraged to counsel with Department specialists in arranging for the service of water and electricity.

Many public services offered by the Department of Water and Power during the year encouraged the broadest use of water and electricity, aided in producing a larger return on investments in facilities, and assisted in maintaining low cost to consumers for service at a high standard of performance.

Wide dissemination of information was made possible through the cooperation of press, television and radio, and through programs of speaking and motion picture films, publications, exhibits and educational work with clubs and civic groups, schools and other organizations. Institutional and sales and service information was brought to public attention through Department advertising. Advertising and sales promotion encouraged broader use of modern appliances and labor-saving devices, contributing to advancing living standards, and increasing the off-peak consumption of electricity. Better home wiring and the general theme of Live Better Electrically were given strong support. Better understanding of water problems and needs, and encouragement of more adequate water piping in the home were fostered through advertising.

Special services were given to customers and potential customers in planning and using water and electric facilities and services in homes, business and industries. Assistance was given to subdividers and developers, architects, builders, plumbing and electrical contractors and many others. Customers were assisted in solving many water and electric problems in response to their request by telephone, letter and personal visits. Aid was given in the location of new industries and the expansion of existing factories. Advisory services were provided in such fields as illumination, heating, air conditioning and other commercial and industrial applications of electricity.

Printed publications and various forms of advertising help to inform customers of the Department.



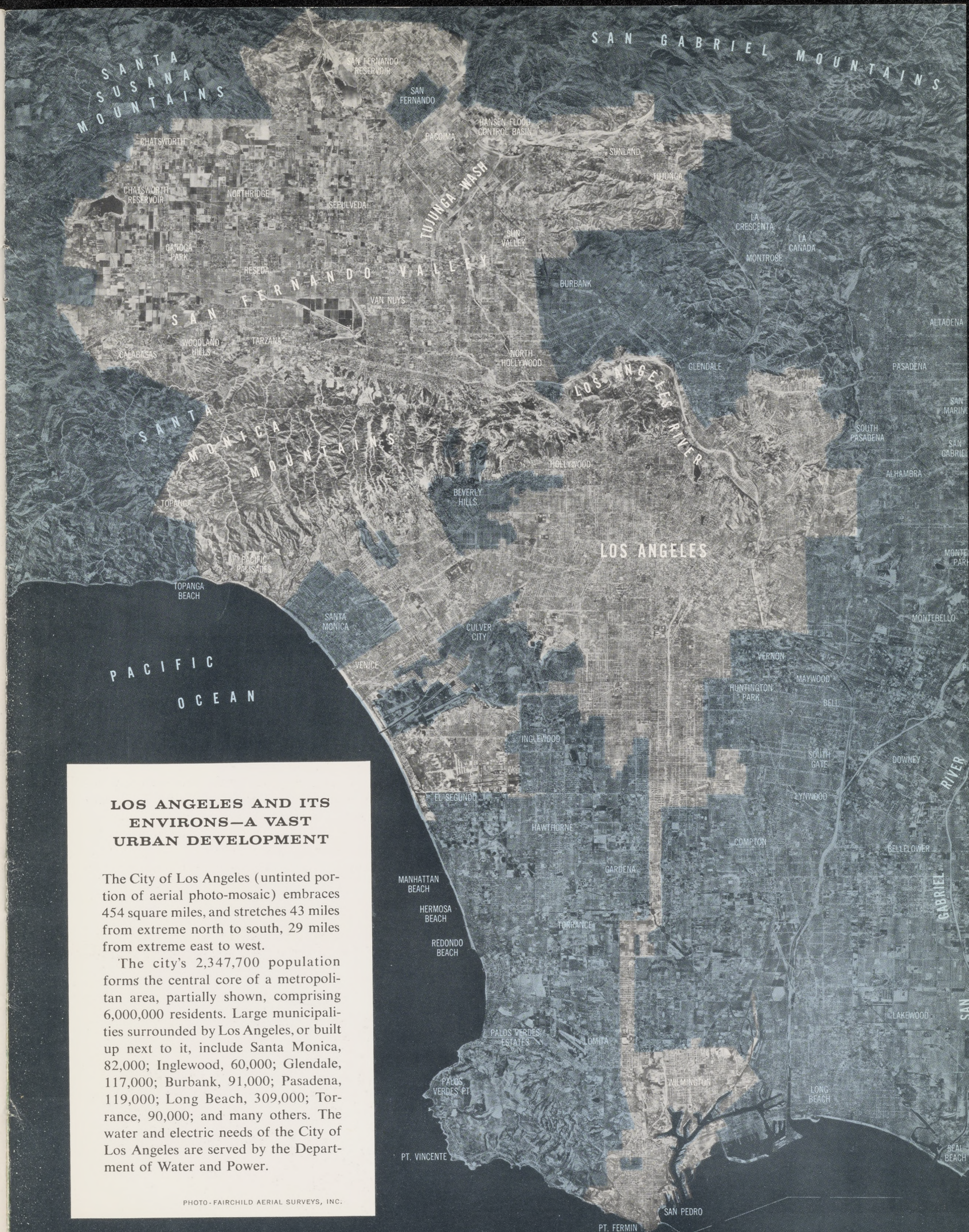


## LOS ANGELES AND ITS ENVIRONS—A VAST URBAN DEVELOPMENT

The City of Los Angeles (untinted portion of aerial photo-mosaic) embraces 454 square miles, and stretches 43 miles from extreme north to south, 29 miles from extreme east to west.

The city's 2,347,700 population forms the central core of a metropolitan area, partially shown, comprising 6,000,000 residents. Large municipalities surrounded by Los Angeles, or built up next to it, include Santa Monica, 82,000; Inglewood, 60,000; Glendale, 117,000; Burbank, 91,000; Pasadena, 119,000; Long Beach, 309,000; Torrance, 90,000; and many others. The water and electric needs of the City of Los Angeles are served by the Department of Water and Power.

PHOTO - FAIRCHILD AERIAL SURVEYS, INC.





*Los Angeles*  
*city-owned*  
*Department of*  
*Water and Power*

